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Various pagings.
In Sessional paper No. 4, page xli, lxi \& Ixxii are incorrectly numbered page $\mathrm{xl}, \mathrm{lx} \& \times x i i$.

In Sessional paper No. 4, Appendix I, page 18 \& 46 are incorrectly numbered page $1 \& 6$.

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A full and complete statement of the property and affairs of the Canada Agricultural Insurance Company, incorporated in 1872, by the Act of Oanada, 25 Victoria, chapter $104-$ such statement to be duly sworn to as required by the Act of Canada, 38 Victoria, chapter 20, and to exbibit a List of the Stockholders, with the amount subscribed for, the amount paid thereon, and the residence of each Stockholder, \&c., \&c. (Not printed.)

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Report of the Cqmmittee of the Privy Council which had under consideration the long and serious delays that had atisen in the organization of the Commission that was to have met at Halifax for the consideration of certain articles in the Treaty of Washington.

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No. 19... Baptisms, Marriages and Burials :-General Statement of, for certain Districts in the Province of Quebec, for the year 1876. [ Not printed.]
No. 20... Statutes :-Official Return of the distribution of the Statutes of the Dominion of Canada, being 39 Victoria, Third Session of the Third Parliament, 1876. [Not printed.]
No. 21... Superannuation :-Statement of Allowances and Gratuities under the Act 33 Vic., cap. 4.
No. 22... Staam Fire Engines:-Return to Order, Statement of all Steam Fire Engines imported into the Dominion of Canada, and the Country whence imported, from 1st July, 1867, to 22nd March, 1876. [Not printed.]
No. 23... Unforeseen Expenses :-Statement of Payments charged to Unforeseen Expenses under Orders in Uouncil, from 1st July, 1876, to date, in accordance with the Act 39 Vict., cap. 1, Schedule B. [Printed for distribution only.]
No. 24... New South Wales Exhibition:-Statement of Expenditure on account of New South Wales Exhibition, under authority of Special Warrant of His Excellency the Governor General, dated 2lst December, 1876, for $\$ 25,000$. [Not printed.]
No. 25... Intercolonial Railway:-Statement of all claims made by private individuals or corporations in relation to the construction of the Intercolonial Railway, within the limits of the Province of Quebec. [Not printed.]
-Names of the Valuators employed on the Intercolonial Railway, in the Counties of Temiscouats and Rimouki, for the purchase of lands and the valuation of damages. [Not printed.]

Claims fyled with the Government for damages caused by the expropriation of lands in the said Counties, and the amount allowed by the Valuator on each of the said claims. (Not printed.)
————Statement shewing the amount which the Government of Canade Wave incurred in the construction of the Branch around Courtney Bay towards the Ballast Wharf, at the City of St. John, N.B.; and for the purchase of the Rankin Wharf Property for a deep water terminus for the said Railway. [Not printed.]

Contract for the Iron Roof of the Station House, to be erected at Halifax ; together with Tenders for the same.
-Tenders received for the erection of the Passenger Station at Halifax ; correspondence, \&c. [Not printed.]

McOreade Correspondence in connection with payments made to J. F. B. McOready and others in King's County, for alleged damage sustained from theIntercolonial Road from fire and other causes. [Not printed.]
N.B., and the Dominion Correspondence between the authorities of the City of Saint John, N.B., and the Dominion Government, in the matter of the Courtney Bay Extension of the Intercolonial Railway to the Ballast Wharf and ground required for the Works. [Not
printed.]
ties of Correspondence between the Government and the interested parties of the Parish of Bic, with reference to the change of site of the Railway Station at the said piace;-also with the interested parties of the Parish of St. Octave de Métis, and neighbouring Parishes, asking that the Station at St. Octave, be placed in a more convenient situation. [Not printed.]
colonial Railway and Correspondence between the workmen on Section 8 of the Intercolonial Railway and the Government, in relation to the non-payment of their wages for work done under the direction of John O'Donnell, agent of Duncan McDonad, contractor for the said section. [Not printed.]

[^0][^1]No. 25... Intarcolonial Railway:-Statement shewing all slaims made against the Intercolonial Railway for damages or loss of any kind sustained by private individuals resulting from working the railway during the year 1876. [Not printed.]

Statement giving full information in relation to the arrangement made between the Government and the Pullman Palace Car Company, in pursuance of which their cars are run on the Intercolonial Railway. [Not printed.]

Statement shewing the varicus tariffs for the carriage of freight on the Intercolonial Railway, which have been in operation since Ist January, 1875, together With the changes made therein ; and also shewing all special rates granted since lst January, 1876, to persons and companies or particular stations. [Not printed.]

Cunty Correspondence relating to property on the Marsh Road in the County of St. John, N.B., alleged to have been damaged by Fire from Locomotives. [Not printed.]

Statement of Tenders made from the 30th June, 1875, to 31st December, 1876, \&c., for Wheels, Axles, Springs and other principal supplies, and for Buildings, Snow Sheds, \&c., including the names of the parties, who made such offers. [Not printed.]

Correspondence with the Phonixville Iron Company, or a person from a Company in the State of Pennsylvania, in relation to any offers for Bridge Superstructure, Iron Roofs, Turn-Tables, Engines, Cars, \&c. since, 31st December, 1875. [Not printed.」

Orders in Council and Correspondence in regard to the appointment of Mr. James McAlister to the position of Cashier of the [ntercolonial Railway, the creation of the office of Dominion Auditor at Moncton, the transfer of Mr. James McAlister thereto, the appointment of Mr. Charles D. Thompson, to the position of Cashier, the subsequent removal of Mr. Thompson, the abolition of the office of Dominion Auditor and the re-appointment of Mr. James McAlister to the office of Cashier; also in regard to the subsequent provision made for Mr. Thompson. [Not printed.]

Statement of Accidents which have occurred on the Intercolonial Railway since 1st July last, the locality and cause of each, and damage done, \&c. [Not printed.]

Contracts for the conveyance of Mails between Wallace in the County of Uumberland and Greenville Station on the Intercolonial "ailway, supplying the several way offices at Wallace Bridge, Six Mile Road, \&c., to lat November last when the delivery for these offices was changed to Wentworth Station, with the Contract for the latter service and the amount paid therefor. (Not printed.)

Return of all monthly measurements and eatimates for the various kinds of work done on Section No. 16, Intercolonial Railway, while under contract to Messrs. King \& Gough, and subsequently under contract to J. O. Gough, shewing the actual quantities and kinds of all work executed and returned, \&c. [Not printed.]
——Correspondence relating to Coal alleged to be detained, forfeited or misappropriated. [Not printed.]

Correspondence in pursuance of which the Officers of the Intercolonial Railway are insured with the Guarantee Company of Ganada. [Not printed.]

Statement showing the authority under which two dwasing-nouses with stables and outbuildings were erected during the past summer, at Monctong for the use of the resident Engineer and Traffic Superintendent of the Intercolonial kailway; the amount authorized to be expended and the amount actually expended. [Not printed.]

Expenses incurred for changing the guage of the Intercolonial Railway, and showing how the expenditure is classified in the Railway Accounts. [Not printed.j

Description and cost of each of the works of the Intercolonial RailWay, not chargeable to ordinary maintenances, which have been constructed daring the two years ending 31st December, 1876. [Not printed.]

Statement shewing (1st) the arrangement made for insuring the Em. ployes of the Intercolonial Railway against accidents ; (2nd), the monthly deductions made from the wages or salaries on account of said insurance; and (3rd), the particulars of all amounts paid out of the Railway on account of such insurance. [Not printed.]

No. 25... Intrroolonial Rallway:-Statement of all expenditures made in constructing restaurant, enlarging the store-house, erecting freight-house, \&c., and other such work done in the railway gtation yard at Moncton during the year 1876. [Not printed.]

- Return showing the number and names of all persons who have passed free on the Intercolonial Railway and its branches; from the lst day of January, 1876, to the 1st day of March, 1877, stating authority, and for what cause such free passages were given. [Not printed.]
-Return showing the total cost of the Superintendent's Palace Oar, so called, including the work done thereon by the artizans employed by the railway authorities, the extra cost of running the same, \&c. [Not printed.]
tendent and all other officers and employes of the said railway, including Conductors, Station Masters and Ticket Agents. [Not printed.]

Return of the resident employés on the Intercolonial Railway within the County of Northumberland-the date of their appointment-when they were located or stationed in their present positions-the nationalities of the several individuals, and the number of them which were at the time of their appointment residents of the said County, with the rate of wages which they respectively receive. [Not printed.]
No. 26... Jbsut Barbacis :-Return and Supplementary Return to Address, Correspondence between the Dominion Government, and the Government of Quebec, relating to the Jesuit Barracks in the City of Quebec, \&c.
No. $27 . .$. Suprame Court :-General Rules and Orders made by the Judges of the Supreme and Exchequer Courts since last Session. ] Not printed.]

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No. 28... MoGml Collzas:-Copy of every contract, deed or agreement entered into between the Government of the Dominion of Oanada and McGill College, concerning an immorable, situate in the City of Montreal, known by the name of the Orygtal Palace, and heretofore possessed by the Board of Arts and Manufactures, and subsequently by the Oouncil of Arts and Manufactures, of the Province of Quebec. [Not printed.]
No. 29... Inmigration Defartirnt, London:-Return to Address, Statement of the amounta expended on behalf of the Dominion in the Government Immigration Department in London, England, and all expenditures connected therewith, from the 30th Jpne to lat January last; also, Correspondence between the Dominion Government and the Agent General of Canada, in London, respecting changes in the Immigration Department at London. [Not printed].
No. 30...| Adrertising :-Return to Address, Statement ahowing the newspapers in which advertising has been done by the Government for the years 1872, 1873, 1874 and 1875, in each of the Provinces of the Dominion, \&o. [Not printed.]
-Return to Order, Statement of the expenses during the years 1874, 1875 and 1876, in advertising on behalf of the Government or any public service in the public journals of the Dominion; also, the amount paid in subscriptions.
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No. 32... $\begin{gathered}\text { the Secretary of State of Canada, dated 16th February, 1877. [Not printed.] } \\ \text { Ohatbat } \mathrm{St}_{\text {t. }} \text { Lodis:-Return to Address, Correspondence between the Domiaion Gor- }\end{gathered}$ ernment and the Government of the Province of Quebec, relating to an exchange of the property called "Vieux Ohateau St Louis," in the City of Quebee, for that of Hospital sad Officers' Quarters, in St. Louis Street of the said City.
No. $33 .$. Harbour Commisioniras, Montamal:-Return to Address, Statement of all salaries, fees and indemnity paid by the Harbour Oommissioners of Montreal, to any member or employé of the said Harbour Oommiesion, since 1872. [Not printed.]
No. 34... Mirtany Colliag, Kiggatox:-Return to Order, Number of candidates that have come forward for admision to the Military College at Kingaton, from each Province, distinguishing those of Frenoh origin from the others. [Not printed.]

No. 35... Financial Agents, \&c.:-Return to Order, Statement of all moneys lying at the credit of the Dominion in any bank, or in the hands of any financial agent, or other persons with whom such moneys are deposited in Canada or elsewhere. [Not printed.]

No. 36... Chenal Ecabte, \&c.:-Return to Order, All expenditure in detail incurred in dredging a channel at the entrance of the Chenal Ecarte, into Lake st. Clair. [Not printed.]
No. 37... Fishermen, St. Lawrince:-Return to Address, Correspondenoe between the Federal Government and Local Government of the Province of Quebec, respecting the distressing condition of the resident fishermen and traders located on the North Coast of the River St. Lawrence, within the Dominion. [Not printed.]

No. 38... Wallace and Malagash :-Return to Order, Contract for the conveyance of the Mail between Wallace and Malagash, in the County of Cumberland, \&c. [Not printed.]

No. 39... Loan :-Return to Order, Prospectus issued by the Hon. Minister of Finance in London for the last Loan-a Statement of the time allowed for the reception of tenders, and the period when the reception of Tenders was closed, with the several amounts offered by parties tendering, and the amounts allotted to them respectively.
No. 40... Mandfactured Goods:-Return to Order, Showing the general nature and value of all Manufactured Goods imported ints Canada from the United States in the years 1874, 1875, and 1876.

No. 41... Manitoba :-Return to Address, Letters between the Dominion Government and the Government of Manitoba, re:pecting the relief to be given to settlers. [Not priated.]
Return to Order, Returns of all lands surrendered by the Dominion Government
to the Government of Manitoba, for road purposes. [Not printed.] to the Government of Manitoba, for road purposes. [Not printed.]
_Return to Order, Correspondence relating to the distribution of Half-breed lands, in the Province of Manitoba. [Not printed.]

No. 42... Rallways, Mbw Brunswick :-Return to Address, Correspondence between the Government of Canada or Companies in New Brunswick, since the lst January, 1874, in relation to aid to be given to the construction of Railways in that Province. [Not printed.]

No. 43... Capiral Oprrsces :-Return to Order, All convictions for capital offences between the 1st July, 1867, and the 31st December, 1876, showing the names of the convicts, the nature of the crime, the action of the Executive, and the date of such action.
No. 44... Loranger, Hon. Mr :-Return to Address, Petitions of T. D. Latour and others, dated the 5th June, 1874, and the 2ad November, 1875, presented to the Government, concerning the Hon. Mr. Justice Loranger, and of all correspondence relating thereto. [Not printed.]
——_-Return to Address, Petition of J. B. Broussean, Esq., of the Town of Sorel, dated the 24th February, 1876, in relation to Mr. Justice Loranger. [Not printed.]
No. 45... Surgrons on Britise Steambrs:-Return to Address, Correspondence between the Government of Canada and the Imperial Acvernment or any Steamship Dumpany or private ïndividual, touching the qualifications of Surgeons on Biitish Steamers, or other passenger ships sailing to, or rom British ports.

No. 46... Dominion Dam: - Return to Order, All instructions or orders from the Department of Public Works relating to the destruction by force, last July, of the Dam called the Dominion Dam, on Devil Lake, in the County of Addington. [Not printed.]
No. 47... Victoria Bryakwater :-Return to Order, Reports in possession of the Department of Public Works, in connection with the Victoria Breakwater, Wood Islands, Prince Edward Island; also all correspondence relating to the same, recèived from the Government of Prince Edward Island. [Not printed.]

No. 48... Oitadel of Quebec :-Return to Order, Contracts between the Government and any person or company for the execution of work at the Citadel of Quebec in 1874 and 1875 ; 2nd. Copies of all arrangements made for the execution of any portion of the said works. [Not printed.]
No. 49... Railwats in Nova Scotia:-Return to Order, Special rates accorded to any companies or individuals for the conveyance of freight over the Railways in Nova scotia or New Brunswick, with the names of the companies or individuals. (Not printed.)
No. 50... Rails:-Return to Order, Quantity of old Rails in the possession of the Government, shewing whether the same are of such a character as to be made availalle for the aiding in the construction of Branch Lines.

No. 51... Nova Scotia, Indian Commismioners:-Return to Order, The number of Commissioners for Indian Grants in Nova Scotia; the Counties over which each presides, and the amount annually placed in the hands of each. [Not printed.]

No. 52... Morris, Hon. Alexander:-Return to Address, Instructions to the Honorable Alexander Morrk, Lieutenant-Guvernor of the North-West Territories. (Not printed.)
No. 53... Weights and Measeres Act:-Return to Order, Instructions from the Department of Inland Revenue to Inspectors, in connection with the Weights and Measures Act; together with the names and salaries of each Inspectors; and Sub-Inspectors.
—_Correspondence relating to the working of the Act on "Weights and Measures." (Not printed.)
No. 54... Vice-Admiralty, \&c., Court of:-Return to Address, Correspondence between the Government of the Dominion, and of the late Pruvince of Canada, and the Imperial Government touching the extension of the Jurisdiction of the Court of Vice-Admiralty to the Inland Waters of Canada.
No. 55... Grand Trunk Railway:-Correspondence respecting disturbance on the line of the Grand Trunk Railway of Canada.
$\qquad$ Correspondence on the subject of the arrangements effected, jermitting the carriages of the Intercolonial Railway Company to run over that section of the Grand Trunk Railway between Rivière-du-Loup and Point Levis.
No. 56... Marine Hospital, Quebec :-Return to Order, For Mr. Langmuir's Report on the Marine Hospital, at Quebec. (Not printed.)
No. 57... Pacific Railwat :-Return to Address, Reports made as to the construction of the Georgian Bay Branch of the Pacific Railway, under contract by the Hon. A. B. Foster, together with a statement of the service or services for which the sum of $\$ 109,000.50$ has been paid to the said A. B. Foster on account of said contract. (With Map.)
——_Correspondence between the Government and the Contractors for the construction of the Pacific Telegraph.
_ Return to Order, Tenders received for the construction of Contract No. 15, Canadian Pacific Railway. (Not printed.)
——_Return to Address, Papers connected with the awarding of Section 16 of the Canadian Pacific Railway, including copies of advertisements for tenders.

Statement shewing the quantity of land purchased for railway purposes by the Government on the Kaministiquia for a terminus of the Canadian Pacific Railway, the persons from whom said purchase was made, and the amount paid therefor. Also, a copy of all correspondence between the Government and the Municipality of Shuniah, Prince Arthur's Landing, touching the terminus of the said Railway, or aid thereto.
Message with Correspondence having reference to the construction of the Canadian Pacific Railway.
-_Statement showing cost of construction of Pacific Telegraph. (Not printed.)
——————————ntracts entered into for construction of the Canadian Pacific Railway, together with a Statement of sums expended in constraction; in conformity with the provisions of the Act 37 Victoria, Uhapter 14, Section 9. (Not printed.)
No. 58... Bloomsburg :-Return to Order, Correspondence with the Postmaster General in reference to charges preferred against the Postmaster of Bloomsburg, in the County of Norfolk. (Not printed.)
No. 69... Printing and Stationery, Post Offici Drpartment :-Return to Order, Showing the amounte paid for printing and stationery for the Post Office Department during the year 1875 and 1876 respectively, other than to the Parliamentary Printer and Contractur at Ottawa, \&c.
No. 60... Colleg, Mr. :-Return to Order, Correspondence and documents relating to the dismissal of Mr. Collet, as Pos:master of St. Henri, in the County of Lévis. (Not printed.)
No. 61...|Live Stock-Imports and Exports, do:-Return to Order, Classified Return of imports and exports of live stock, showing place from whence it comes and destination; for each quarter, from March 1st, 1876, to January 1st, 1877, and for the mouth of January, 1877.

No. 62... Great Bras d' Or:-Return to Order, Correspondence regarding the Postmaster at Great Bras d'Ur and the reason why McLeod did not get the office, after he was appointed. (Not printed.)

No. 63... Seizing and Landing Ufficars .-Return to Order, Correspondence with John Baine, Angus Morrison and Charles S. Campbell, regarding their dismissals from office as Seizing and Landing Officers at Great Bras d'Or.

No. 64... Gypsom :-Return to Order, All Gypsum or Plaster of Paris imported from the United States into Canada, giving the Ports or places whence imported, as also the Ports in Canada where entered. (Not printed.)

No. 65... Sugar Imported, \&c:-Return to Order, Return from 1st January, 1875, to 1st January, 1877, showing the quantities of different grades of sugar imported from Europe, British and Foreign West Indies and the United States.
No. 66... Partridge Island River, \&o:-Return and Supplementary Return to Order, Oorrespondence relating to the improvement of the Harbor at the mouth of Partridge Island River. (Not printed.)

No. 67... Ingonish Harbor :-Return to Order, Tenders and Contracts for the construction of a Harbor at Ingonish, Nova Scotia, \&c. (Not printed.)

Return, Plans of Contract for building Ingonish Harbor (being part of Contract); also report of Engineer agreeing to curtailment of said original plans and specification, and the correspondence on that subject. (Not printed.)
No. 68. ${ }^{-1}$ Senators, Additional :-Return to Address, Correspondence that has taken place between the Canadian and Imperial Governments since 1873, in reference to the appointment of additional Senators to the Denate, as provided by Olanse 26 of the British North America Act.

Return to Address, All correspondence between the Dominion and the Imperial Governments from the month of October, 1873, to 31st December, 1874, and relating to the appointment of Senators for the Dominion. (Not printed.)

No. 69... Creighton Joseph:-Return to Address, Correspondence with the Government relative to the appointing last year of Joseph Creighton, Shipping Officer for the Port of Lunenburg, Nova Scotia. (Not printed.)

No. 70... Lakr Horon Mail Sernice, \&c. :--Return to Address, Advertisement or notice issued calling for tenders for the performance of the Mail Service for the season of is76, on Lakes Huron and Superior between the ports on Lake Huron and the Georgian Bay and Prince Arthur's Landing, Duluth, \&c. (Not printed.)

No.'71... Marink Hospital, Sydnsy:-Return and Supplementary Return to Order, All money expended in building a Marine Hospital at Sydney, Cape Broton. (Not printed.)
No. 72... Oars on Railways, Interchange of, \&o.:-Return to Order, Statement of any arrangement made between the Government Railways and the Grand Trunk Railway Company, for the interchange of cars and transportation of passengers and freight. (Not printed.)

No. 73... River Sydenhan Surviys, \&c.:-Return to Order, Statement in detail of all expensea incurred and moneys expended in connection with the surveys of the North Branch of the River Sydenham. (Not printed.)
No. 74... Bais St. Paul, \&c.:-Roturn to Order, Mr. Kingsford's Report on the Piers ;atj引Baie St. Panl, Eboulements and Malbaie, in the summer of 1876. (Not printod.)
No. 75... Goderioh Harbor Works:-Return to Address, Orders in Council, having reference to the Goderich Harbor Works.

No. 76... Militiamen 1812 ' 15 :-Return to Order, Shewing the names of all veterans who have proved their right to partake in the grant of $\$ 50,000$ voted last session by Parliament in faror of Militiamen of 1812 and ' 15.

CONTENTS OF VOLUME No. 9.
No. 77... Sterl Rails :-Return to Address, Statement showing the use which has been made, during the year 1876, of any portion of the Steel Rals purchased by the Government in the years 1874 and 1875.
chase of 50,000 tons of Steel Rails, fastenings, $\$ c$., for the Paoific Railway.

No. 78... Governmant Railways, Maritime Provinces:-Return to Address, Shewing the number of tons of freight carried over the Governnent Railways in the Martime Provinces, in the quarter ending December 31st, 1875. (Not printed.)
 relation to the enlargement of St. Peter's Canal, in the Island of Cape Breton. (Not printed.)
No. 80... Dominion Notes:-Return to Address, Statement showing the amount of Dominion Notes that have been redeemed in gold from the first day of September, 1874, to the 31st December, 1875, showing the names of the banks or individuals making the demand, or to whom the money has been paid. (Not printed.)

Return to Order, Accounts of Dominion Notes of the denomination of one and two dollars, payable in Victoria, which have been forwarded by Government to the Assistant Receiver-General for the Province of British Columbia, during each year, since the admission of thut Province into the Dominion. (Not printed.)

No. 81... Sydney to Cow Bay, \&c., Malls:-Return to Address, Contracts entered into daring the year 1876, for the conveyance of Her Majesty's Mails from Sydney to Uow Bay, Little and Big Glace Bays, and Bridgeport, in the County of Cape Breton. (Not printed.)
No. 82... Voionteer Force of Canada:-Return to Order, The names of all the Deputy AdjutantGenerals and Brigade Majors on the Staff of the Volunteer Militia. Force of Canada on the 1st day of January, 1876. (Not printed.)
No. 83... Barnard, F. J. :-Return to Address, Correspondence between the Government of Canada and F. J. Barnard, Esquire, Contractor for the Telegraph Lines in British Columbia, since the 26 th May, 1875.

-     - Return to Order, Statement showing each sum of money paid to F. J. Barnard, Esquire, Contractor for the Telegraph Lines in British Columbia, since the 10th February, 1875. (Not printed.)
No. 84... EAGie Hanbor :-Return to Engineer's Report of the Survey of Eagle Harbor, in the Oounty of Eigin, to decide on its suitableness as a Harbor of Refuge; and map of the said Harbor. ( $N$ ot printed.)
No. 85... Scotr's Junction:-Return Jto Order, Correspondence between the Inspector of Post Offices for the Quebec Division, in relation to the contract for carrying the Mail between Scott's Junction, in the County of Beauce, and Parish of St. Bernard, in the County of Dorchester. (Not printed.)
No. 86... Nova Scotia, Great Seal:-Return and Supplementary Return to Address, All correspondence relating to the Great Seal of the Province, that has been affixed to all documents requiring the same since Confederation.
No. 87... Gramam, William:-Return to Urder, Correspondence between Sarah Graham, Widow, and the Government, in reference to an application for aid in consequence of the reduction of salary and subsequent death of the late William Graham, at that time a Messenger of this House. (Not printed.)
No. 88... Fort Francis Loces, \&e.:-Return to Address, all Orders in Council relating to the construction of Port Francis Locks or Canal.
No. 89... Provingial Acts, Disallowance of:-Return to Address, "All correspondence between the Federal and any of the Provincial Goveraments since the establishment of Confederation concerning the disallowance of Provincial Acts or the action on Provincial Billa reserved.

Return to Address, Correspondence between the Imperial and Canadian Governments, concerning the mode of exercising the power of disallowance of Proviricial Acts.
No 90... Rondeat Lighthousa:-Return to Order, Shewing in detail the cost of erection of Lighthouse at the Barbor of Refuge at Rondean. (Not printed.)
No. 91... Nicolas Rioux:-Supplementary Return to Order, Correspondence between the Government and the Censitaires of the Seigniory Nicolas Rioux, in the County of Rimouski, in the matter of the tax which they pay to the Seigniors, instead of Statate days labor (les journées de Corvée). (Not printed.)
No. 92... $\begin{gathered}\text { Dominion Police :-Annual Return under the Act } 31 \text { Victoria, chapter 73, section 6, shewing } \\ \text { the average number of the Dominion Police employed during each month of the }\end{gathered}$ the average number of the Dominion Police employed during each month of the year, ended 318 Decamber, 1876 ; the cost of pay, and of travelling expenses, expended in respect thereof. (Not printed.)

No. 93.. Malt, Duty on:-Return to Order, Instructions issued from the Inland Revenue Department to its Offlcers throughout the Dominion, as to what time the additional duty on malt was to take effect. (Not printed.)
——_Return to Order, Monthly Return of the malt taken out of bond each month from the 1st July, 1876, to the 28 th February, 1877. (Not printed.)

No. 94.. Tobique Indians:-Return to Order, Correspondence between the Government and the Tobique Indians relating to the appointment of a resident agent at that place. (Not printed.)
No. 95.. LLe Crídit Foncier du Bas Canada:-A statement of the property and business assets and liabilities of a Company bearing the name of "Le Crédit Foncier du Bas Canada," incorporated under Chapter 102 of the Statutes of Canada, 36 Vic., (1873), \&c. (Not printed.)

No. 96.. "Bebne" Postal Union:-Return to Address, All correspondence in regard to placing the Dominion of Canada in as favourable a position as ary Foreign Country, under the provisions of the Postal Union made at "Berne" on the 9 th October, 1874. (Not printed.)

No. 97. Lapsed Balances, \&c.:-Return to Order, Showing all amounts carried over by Orders in Council, at the end of the financial year, under the authority of Chapter 2 of the Act of last Session; with copies of the Orders in Council, and a Statement of the amounts of such lapsed balances remaining unexpended at the end of three months from that date; together with a Statement of all amounts carried forward by Orders in Council, from 1st July, 1867, showing the sums actually expended in each case, and the Parliamentary authority sanctioning the same. (Not printed.)
No. 98.. "Northern Light":-Return to Address, Showing the number of passages made by the Steamship Northern Light between Georgetown in Prince Edward Island and Picton, or Pictou Island in Nova Scotia and back; the number of mails carried by the said steamship, and the number of passengers carried by her on each passage. (Not printed.)

Return to Order, Showing the total amount of cost of the Steamer Northern Light; slso an account of any and all expenditure in connection with the said Steamer, down to the 3lst January last. (Not printed.)

Return to Order, Contract with Mr. Sewell for building the Steamer Northern Light; the Report of the Inspector and Government Agent connected with the building of the said Steamer. (Not printed.)
No. 99.. Mrrchant Shipping:-Return to Address, Correspondence between the Government of Canada and Her Majesty's Government in relation to Legislation affecting Merchant Shipping. (Not printed.)

Instructions given to Mr. William Smith, Deputy of the Minister of Marine and Fisheries, on his recent mission to England in connection with the above subject. (Not printed.)
_C_Correspondence had in relation to such mission between the Minister of Marine and Fisheries and the said Deputy with the Report of the said Deputy, in relation to such mission. (Not printed.)
No. 100. . Canadian Ships sold in France:-Return to Address, Correspondence between the Government of Canada, the Imperial Government and any other Governments or persons on the subject of the duty imposed on Canadian ships sold in France.
No. 101..'Steam Conmonication, P.E.I. :-Retura to Address, Statement showing what steps have been taken by the Government, touching the opening up of steam communication in the winter season, between Prince Edward Island and the mainland, in accordance with the terms of Union. (Not printed.)
No. 102.. Intervational Exhibition, Philadrlphia, 1876 :-Report of the Csnadian Commission of. (Not re-printed for Sessional Fapers.)
No. 103. Revence Paid by bach Province, \&c.:-Return to Order, Setting forth, as nearly as the officers of the Government can do so, the amonnt of the revenue paid by each Province of the Dominion, and the expenditures made therein on Dominion account during the past five years.
No. 104.. Natigation of Amerioan Canals:-Return to Address, Correspondence between the Dominion, United States and Imperial Governments, respecting the navigation of American canals and rivers.
No. 105.. Coal Imported into the Dominion:-Return to Orier, Quantities and value of the Cosl imported into the Dominion of Canada for the six months ending 31st December, 1876.

No. 106.. Horse Shoe Bar Channel, Miramichi Rifer :-Return to Order, Correspondence between the Minister of Public Workant the officer in charge of the dredging improvements and deepening of the Horse sluve Bur Channel at the entrance of the Miramichi River. (Not printed.)
No. 107 .. Arichat West Breakwater:-Return to Order, Reports and plan of Arichat West Breakwater, in the County of Richmond, Nova Scotia. (Not printed.)
No. 108. Smelt Fisheries, Habbour of Bathurst:-Return to Address Orders, in Council, Rules and Regulations made in relation to the Smelt Fisheries in the Harbour of Bathurst. (Not printed.)
No. 109.. Plotage Returns, Cape Breton:-Return to Order, Returns from Pilotage Authorities of ${ }^{\prime}$ Cape Breton for the year 1876, showing the names of all Pilots, and the amount paid to each. (Not printed.)
No. 110.'Intoxicating Liquors, Sale of, \&c.:-Return to Address, Correspondence between the Government and the Lieutenant Governors of the different Provinces regarding the relative jurisdiction of the Dominion and Provincial Parliament over the manufacture and sale of Intoxicating Liquors. (Not printed.)
No. 111. Little Glage Bay, Harbour Fers, \&c. :-Return to Order, Return of the Harbour Master for the Port of Little Glace Bay, N.S., for the year ending 31st December, 1876; shewing the amounts of Fees collected; the names of all vessels from which fees were collected ; also any Correspondence in relation to the office of Harbour Master of the Port of Little Glace Bay, N.S. (Not printed.)

No. 112. Toronto Harbour :-Return to Order, Statement shewing the estent and character of the Works carried on in the mprovement of the Toronto Harbour daring the past year. (Not printed.)
No. 113. Long Islano Bridgr By-Wash, \&c. :-Return to Order, Correspondence between the Government and the Council of the County of Carleton respecting a Bridge over the By-Wash at Long Island. (Not printed.)
No. 114. Cclbute Canal:-Return to Order, Correspondence between the Department of Public Works and the Engineer in charge of the Gulbute Canal, in reference to the petition of Elizabeth Sullivan, of the Township of Pembroke, in the County of Renfrew, praying for compensation for damages alleged to have been sustained by her, through the construction of a Dam at the said Culbute Canal. (Not printed.)
No. 115. Port Hood Harbocz:-Return to Order, Reports and Plans of Port Hood Harbour, in the County of Inverness, made by the Engineers under the direction of the Dominion Government. (Not printeq.)
No. 116. Rideau Rifer, Village of Welington:-Return to Addresb, Correspondence between the Government, and the Council of the County of Carleton, respecting a Bridge across the Rideau River, at the Village of Wellington. (Not priated.),

No. 117. St. John River, N.B.:-Return to Order, Reports made by the Engineer or Engineers in charge of Public Works on the improvement of the Navigation of the St. John River, N.B., since June, 1871. (Not printed.)

No. 118. Jodicial Staff, Montreal :-Return to Address, Oorrespondence since last Session, between the Federal and the Quebec Governments, concerning the Judicial Staff of the District of Montreal. (Not printed.)

No. 119. Cable Companies, \&o.:-Return to Address, Correspondence between the United States Cable Company The Anglo-American Telegraph Company and any other Marine or Telegraph Company and the Government, as well as copies of all Orders in Council affecting the same, since the twenty-first day of March, 1876.

No. 120. Montreal Harrour Oommisioners :-Return to Order, Statement as exact as possible, shewing the amount paid by each Steamboat, to the Harbour Commissioners of Montreal, during the season 1875-76, for wharfage dues,-together with the name and length of such Steamboat. (Not printed.)

No. 121. Morbis, Hon. Alsxandxr:-Return to Address, Instructions to the Honourable Alexander Morris, Lieutenant-Governor of the North-West Territories; also copies of all Orders in Council relative to the said Territories aince their organization, and not already published; alao copies of all reports and official correspondence between the Lieutenant-Governor and the Dominion Government from the date of his appointment.

No. 122. Agpy Bay Harboor, Victoria:-Return to Order, Report of the Government Engineer, on the practicability of opening Aspy Bay Harbour, Victoria, so as to admit vessels of certain toanage, in the year 1872. (Not printed.)
No. 123. Post Offices and Custon Houses of the Duminion:-Return to Order, Shewing the number of Post Office and Custom House Buildings owned by the Dominion, designating those built since 1867; the names of the Cities and Towns where the same are situater (Not printed.)

No. 124. Esyumadlt, Graving Dock:-Return to Address, Correspondence by telegraph or otherwise respecting the Graving Dock at Esquimault since July, 1874. (Not printed.)

No. 125.. Quebec to Lake St. John, Railway :-Return to Order, Correspondence respecting the grant by the Dominion Government of a sum of money, to assist in the construction of the Railway from Quebec to Lake St. John. (Not printed.)
No. 126.. Mail Bag, Loss of, \&c.-Return to Order, Correspondence between the Postmaster General and the Pust Office Inspector at Halifax and other Post Office officials, with reference to the loss of a Mail Bag between Truro and Halifax. (Not printed.)
No. 127.. Mowat, John :-Return to Order, Commission or other document appointing John Mowat a Fishery Officer in the County of Restigouche, in the Province of New Brunswick. (Not prinled.)

No. 128.. Demp-Sea Weirs or Pounds :-Return to Order, Numher of persons who have obtained Licences or permission from the Department of Marine and Fisheries to erect Deep Sea Weirs or Pounds for the purpose of capturing Fish at the Head-lands or Capes of the Maritime Provinces. (Not printed.)

No. 129.. Notre Dame de Grace and Ste. Cunegondr, P.Q.:-Requrn to Order, Petitions respecting the establishment of a Post Office at Notre Dame de Grace, near Montreal, and of another at Ste. Cunégonde, part of the territory of the Town of St. Henri, in the County of Hochelaga, recently erected into a separate Municipality. (Not printed.)

No. 130.. Norris, J. G. :-Return to Address, Correspondence with reference to the appointment of Mr. J. G. Norris, as Deputy Collector of Customs, Kootenay, British Columbia. (Not printed.)

No. 131.. Schoonkr "Napier":-Return to Order, Correspondence connected with the seizure of the Schooner Najier, in Ingonish, in the year 1872, for smuggling, and a statement showing if the Hon. William Ross has redeemed his bonds given for the release of said vessel. (Not printed.)

No. 132.. Warten, Wm. : -Return to Order, Correspondence relating to the superannuation of William Warren, Esq., late Collector of Customs for the Port of Whitby, Ontario. (Not printed.)
No. 133..' Victoria and Kootenat, Ccstoms Stations:-Return to Address, Correspondence between the Government and Mr. C. T. Dupont, or any other parties, with reference to his inspection of the several Customs Stations between Victoria and Kootenay, in 1876.

No. 134.. Nuwcastle, Ont., Fish-brending Establisimgent:-Return to Order, Showing the title held by the Government to the land and other property connected with the Fish-breeding establishment at Newcastle, Ontario. (Not printed.)
No. 135.. New Brunswice, Non-tidal Waters :-Return to Order, All leases of the right to fish in the non-tidal waters of New Brunswick. (Not printed.)

No. 136.. Cove Field, Quebre :-Return to Order, Statement showing the instructions given for the division of the Ordaance property at Quebec, known as the Cove Field; the cost of dividing, \&c. (Not printed.)
No. 137.. Government Derosits in Banks, \&c.:-Return to Order, Return of the Government deposits in the different Banks of the Dominion on the first day of each month, from January lat, 18\%6, to January 1st, 1877, inclusive ; and also at the agencies of such Banks and other Banking Houses in London.
No. 138.. Illicir Stiles.-Return to Order, Shewing the number of Illicit Stills seized by the Revenue Officers of the Dominion in 1873, '74'and '75. (Not printed.)
No. 139.. Cabcumpec Harbocr :-Return to Address, Survey and Report on the Improvement of Cascumpec Harbour, Prince Edward Island, made by C. E. Perley; Esq., O.E. (Not printed.)
No. 140.. Montreal Museum :-Return to Address, Correspondence which has taken place between the Director of the Geological Survey and the. Minister of the Interior since the lst April, 1873, on the subject of removing the Stalf and Museum from Montreal to Ottawa.

No. 141.. Ridsat Canal:-Return to Order, Shewing the quantity and price of land purchased for the purposes of the construction and maintenance of the Kingston and Ottawa Division of the Rideau Canal. (Not printed.)
No. 142. Malls Drlaymd, \&c., Grand Trunk :-Return to Order, Statement skewing the expenditure incurred by the Post Office Department for carrying the mails below Quebec, during the whole time when the Grand Trunk was stopped by snow, during the winters of 1874 , 1875 and 1876. (Not printed.)
No. 143.. Rallway Statistics of Canada:-Reports for the years 1875-76.
No. 144.. Ciml Service :-Return, in part, to Order, For certain statistical information respecting the inside and outside Divisions of the Civil Service of Canada.
lst of January Return to Order, for the names of persons appointed to office between the lst of January and the 7th of November, 1873 ; the names of the officials whose salaries were increased during the same period; the names of those so appointed whose appointments were cancelled subsequent to the 7th of November. (Not printed.)
No. 145.. Engineens' Estmates, \&c.:-Return to Address, Reports and estimates of the Engineer upon the works proposed to be performed at the following ports or localities, namely:Arisaig, N.S., Annapolis, N.S., \&c., \&c. (Not printed.)
No. 146.. Governmbnt Officials, P.E.I. :-Return to Address, shewing the names of all Government Officials in Prince Edward Island, specifying nature of office held by each, date of appointment and amount of salary.
No. 147. . Charbonneau and Coter :-Return to Address, A petition complaining of injustice done by the Montreal Harbour Commissioners, or by some person or persons in their employ, in the arbitrary dismissal of Pierre Charbonneav, Pierre Coté and several others employed on the works of the said Commissioners on the River St. Lawrence. (Not printed.)
No. 148.. Bushby, Arthur T.:-Return to Address, Correspondence between the Dominion Governmeut and the Local Government of British Colvmbia, relative to the appointment of a County Court Judge for the District of New Westminster in place of Arthur T. Bushby, deceased. (Not printed.)
No. 149.. Buffalo in N. W. T., Preservation of the:-Return to Address, Communications from the first Council of the North-West Territories in regard to the preservation of the buffalo; and all Orders in Council or Acts passed by the present Government of the North-West Territories baving this object in view. (Not printed.)
No. 150.. Parry Sound Harbodr:-Return to Order, Engineer's Report of the survey of Parry Sound Harbour, made by Mr. Michand, C.E., and others, in 1876. (Not printed.)
No. 151.. Marquettr, Man., Woodiand in :-Return to Order, Showing the quantity of woodlund in the County of Marquette, and the number of licenses to cut wood, sold or issued by the Dominion Lands Offire, in Manitoba, during the last three years, to persons not being actual settlers. (Not printed.)
No 152.. Rallway Frogs, Accidents by:-Return to Address, Showing the number of accidents to persons caught in railway frogs; the points where the accidents occurred, and the particulars connected therewith; for the five years ending 31st December last. (Not printed.)
No. 153.. Indian Lands, B.C.:-Return to Address, Currespondence between the Local and the Dominion Governments during 1876, with reference to the adjustment of Indian lands, in Britiah Columbia. (Not printed.)

No. 154.. Kidston, William:-Return to Order, Correspondence in connection with the defalcations of the ex-Collector of Custcms, William Kidston, at the Port of Baddeck. (Not prinied.)

No. 155.. Colwrll, William:-Retarn to Order, Correspondence in connection with the dismissal of William Colwell, locker in the Customs House Department, St. Johu, New Branswick. (Not pranted).

No. 156.. Canadian Shipping, Ligert Duss on :-Return to Address, Correspondence that may have pazsed during the past three Years between the Government of Great Britain and the Government of this Dominion, relatiye to the abolition of light dues on Canadian shipping. (Not printed.)

No. 157. Fisharaes, \&c., Abolition of:-Return to Order, Papers relating to the abolition of fisheries in the rapids of the Richelieu, in front of the Village of the Canton of Uhambly. (Not
printed.)

No. 158. St. Prter's Canal:-Return to Address, Contracts and Orders in Council during the year 1876, in connection with the enlargement of the St. Peter's Canal. (Not printed.)
No. $159 .$. L'Islet, \&c., Breakwaters:-Return to Address, Instructions given to Mr. Kingsford, and correspondence in relation to repairs and other work done on the breakwaters at L'Islet, Riviere Ouelle, Rivière du Loup and Rimouski, on the south shore of the St. Lawrence, Pruvince of Quebec. (Not printed.)
No. $160 .$. Point Escuminac Brabeifatrr:-Retura to Order, Correspondence with the Government and the inhabitants of the County of Northumberland, in relation to the necessity of a breakwater for the protection of fishermen at the easterly side of Point Escuminac. (Not printed.)

No. 161.. Government Rallways-Iron Ralls:-Return to Order, Showing the quantity of iron rails removed from the Government railways-Railway Companies to which they have been loaned, \&c.

No. 162.. Morfatr, Robert :-Return to Order, Letters, \&c., which have passed between Robert Moffatt, of Dalhousie, N.B., and the Government of the Dominion, in respect to the transport of, cargoes of rails and other railway materials from the vessels Colonist, Bessie Parker and Stabstudt, \&c.

No. 163.. Department of Justice-Ordnance Land Sales:-Return to Address, Statement of all sums of money charged and received by the Department of Justice, by way of costs or moneys over due on ordnance land, sold under authority.

No. 164.. Deck Loan Law :-Return to Address, Correspondence between the Government of Canada and the Inspector of Customs for the Province of Nora Ncotia, or any of the Custom House officials, in relation to the violation of the Deck Load Law. (Not printed.)
No. 165.. Prince Edward Island Railway:-Return to Address, Disbursements paid on account of the Prince Edward Island Railway up to January, 1876, together with a statement of the earnings of the Road up to that time. (Not printed.)
.No. 166. Newspapers Paid Postage, \& : - Return to Order, Statement setting forth the total number of Newspapers and other periodicals in each County and City of the Dominion, which have paid postage on papers sent from "the office of publication," with the total revenue raised therefrom during the past year. (Not printed.)

No. 167. Pllotage, Tariff of:-Return to Address, Order in Conncil of the 5th March, ultimo, approving of a By-law of the Montreal Harbour Commissioners, in reference to the Tariff of Pilotage between Quebec and Montreal. (Not printed.)

No. 168.. Opper St. Francis, N.B:-Return to Order, Gorrespondence in the possession of the Government, regarding the dismissal of the Postmaster of Upper St. Francis, in the County of Madawaska, in the Province of New Brunswick. (Not printed.)
No. 169.. Campbellton and Paspebiac:-Return to Order, Correspondence respecting the renewal of the contract for the transportation of the mail between Campbellton and Paspebiac. (Nut printed.)

No. 170. Cattle, Impontation of:-Return to Order, Showing the value of live cattle imported into and exported from each Province, between the lst day of January, 1875, and the lat day of January, 1877 ; the value of live cattle imported and exported, and the total value of meats, fresh or cured.

No. 171.. "Chambly" and "Chltivateur" Steamers:-Return to Order, Statement showing the amounts paid by the Steamer Chambiy and the Steamer Cultivateur, at the St. Our's Lock ou the River Chambly, during the seasun of 1875. (Not printed.)

No. 172.. Prince Edward Island, Legal Services, \&c.:-Return to Order, Of all monies paid for legal services or legal expenses in Prince Edward Island, from lst January, 1874, to the present time. (Not printed.)
No. 173.. Fog Whistle, Cape D'OR:-Return to Order, Corresponcience between the Government and any parties in Nova Scotia, relating to the supply of coal and water for the operation of the Fog-Whistle at Cape D'Or. (Not printed.)

No. 174.. ${ }^{\text {Harbor Masters, Sorml, St. Joun, \&o:-Return to Order, Indicating the names and date of }}$ appointment of Harbour Masters at Sorel, St. John's, Three Rivers and Lachine, in the Province of Quebec, and also giving a detailed account of all fees collected by said Harbour Masters since the 15th April, 1875, up to this date, under the suthority of 38 : Victoria, Chapter 30, amending 37 Victoria, Ohapter 34, together with the names of the ships on which such foes have been levied in each year, and the names of the masters of those ships. (Not printed.)

No. 175. St. Augustan, Parish uF:-Return to Orbiter, Gorreaponlence in relation to the appointment, of a new Postmaster for the Parish of Sit. Augustit, County of Two Mountains, and to the change in the location of the Post Office the of said Parish. (Not printed.)
No. 176. Cornock, Whity :-Return to Order, All correspondence in reference to the dismissal of Mr. Wm. Cornock from the Postmastership of Erin Village, in the County of Wellington. (Not printed.)
No. LiT.. Kennebec Railway, Mail Conducturs:-Return to Address, Correspondence having referpence to the change of Mail Conductors on the Kennebec Railway, since the first of January, 1575 ;--and also the names of those parties from whom contracts wire taken away since that date. (Not priute.l.)
No. 178.. Portage Ssland:-Relimen to Address. Correspondence between the Dominion Government and the British Guvermment, in relation to the transfer of Portage lima, in the Bay of Miramichi, from the jarishlietion of the British Admiralty to the Dominion (government. (Vol printed.)
No. 179.. Government Deposits, Ontario Bank: -Return to Order, Correspondence between the President or Cashier of the Ontario Bank and the Hon. the Finance Minister, or the Fiance Department, respecting the Government Deposits in tire Ontario Bank since lat November, 1873, to the present time.
No. 180.. British Columbia Malis:-Return to Order, copy of every tender received since November i last by the Postal Department, for carrying the Mails in British Columbia. (Not printed.)
No 181.. Slop Masters, Ottawa Rask:- Return to Order, Shewing the names of the Slide Matters at each of the Slide Stations on the Utawa River and its tributaries on the lat day of July, 1876 ; the salary or remuneration paid to each, the number of pieces of timber and saw logs, respectively, passed through each of the said Slide Stations, for the year ending lIst July, 18i6. (N ot printed.)
No. 182..' Quebec Harbor Commissioners :--Return to Address, Petition of the Harbor Commissioners of Quebec, praying for the guarantee of the Government for an additional sum of $\$ 250,000$, in order to complete improvements. (Not printed.)
No. 183.' Kamodaaska Court Hodse:--Return to Address, a statement of debentures issued by the Government of Canada, for the purchase of a building for the Court House and Gaol of the District of Kamouraska, \&c. (Not printed.)
No. 184.. St. Jean L'Evangeliste de la Noovelle Post Office: -Return to Address, Correspondence on the subj, ct of the closing of the Post office in the vicinity of the church St. Jean L'Erangeliste de lit Nouvelle. (Not printed.)
Nu. 185. Dews, Joun:-Return to Order, Commission or other documents appointing John Dew, Post Office Inspector, mid also of all orders defining his duties and functions. (Not printed.)
No. 186..Nase, J. Murray :-Return to Order, Correspondence in connection with the dismissal of J. Murray Nose, Postmaster, at the mouth of the Neripis, King's Co., N.B. (Not printed.)

No. 187.. Letters, Unirepaid:-Return to Order, Correspondence between the Council of the Quebec Board of Trade, sad the Dominion Government, relating to the rule in existence in regard to unprepaid letters. (Not printed.)
No. 188. Bass and Gabpeqadx Fisher es, Miramichi:-Return to Address, All Reports to Council in relation to the Bass and Gasperaux Fisheries, in the Rivers Japan and Black River, Miramolchi, and the shores of the vicinity of the same. (Not printed.)

No. 189.. Lachine Canal;-Retura to Order, Statement shewing the names and salaries or wages of each officer composing the Government staff of the Lachine Canal for 1875-6 and 1876-7; aud the amount of contingencies in connection with the said staff for each of these years. (Not printed.)

No. 190. Lagacé, Benjamin :-Return to Order, Correspondence respecting the appointment of Mr. Benjamin Lagacé as Postmaster of Jonquieres, in the County of Chicoutimi, \&c. (Not printed.)

No. 191 Nurib Ambrican Buendary Oommission:-Measage, transmitting Despatch, dated lat Septemper. 1876, from A. M. Secretary of State for the Colonies, relative to the North American Boundary Commission, together with a record of the proceedings, at the meeting held by the Commissioners on the 29th of May last. (Not printed.)
No. 192.. Carpenter \& Co.:-Return to Address, Returns of all moneys paid to Carpenter \& Co., together with $O$ decs in Council recommending such payment on account of the Dawson Route Subsidy, from 1st January, 1877, to 31st March, 1877. (Not printed.)

No. 193.. Canada Central Extension, Enginker's Report:-Return to Order, Engineer's Report of the Bonnechère and other pussible routes of the Cauada Ceatral Extension. (Not priniet)

No. 194.. Grological Survey of Canada:-Report of Progress of the Geningical Survey of Canaida, by Alfred R. C. Selwyn, F.R.S., F.G.S., Director, for the year $1875-76$. (Not re-printed in Sessional Papers.)

No. 195.. Macdonald, Right Hon. Sir J. A.:-Return to Urder, Statement of the suits and legal matters in which the legal firm of the Honorable Sir John A. Macduoulif, M.P., or any partner of his said firm was instructed by his Department to art on belalf of the Crown, during his tenure of office as Minister of Justice and Attorney-General of Canada. (Not printed.)


FISCAL YEAR ENDED 30 Th JUNE, 1876.

Presented to both Houses of Parlioment by Command of His Excellency. RODOLPHE LAFLANME, Minister of Inland Revenue.



OTTAWA:
Printed by maclean, roger \& Co., Wellington street.

# To His Exeellency the Right Honorable Sir Frederick Temple, Earl of Dufferin, K.P., K.C.B., P.C., Goverror General of Canada, \&c., \&c., \&c. 

## May it Please Yefr Excellency:

Herewith I have the honor to present to your Excellency the Retunns_ and Statistics of the Inland Revenues of Canada, for the Fiscal Year ended 30th'June, 1876, as prepared and laid before me by the Commissioner of Inland Revenue.

Most respectfully submitted.

> RODOLPHE LAFLAMME, Minister of Inland Revenue.

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## COMMISSIONER'S REPORT.

## To the Honourable

The Minister of Inland Revenue,
Sir,-Herewith I have the honour to submit Statements of Revenues collected by this Department for the fiscal year ended 30th June, 1876, together with the usual information as to the cost of collecting the same, and the statistical details respecting the sources whence these revenues were derived.

The following summary comparison shows the accrued revenues for the years ended 30th June, 1872, '73, '74, '75 and '76 respectively.


By the above statement it will be seen that the accrued revenue during the year just closed was $\$ 6,376,332$ as against $\$ 6,003,241$ for the year $1874-75$, being an increase of $\$ 373,091$ or about $6 \frac{1}{2}$ per cent.

This increase has arisen as follows:-
Upon Excise.
\$427,924
" Weights and Measures, Gas and Law
Stamps . . . . . . ................................ 2,116

There was a falling off in the revenue- 430,040
From Public Works of. . .......... \$21,673
" Bill Stamps of................ 17,644
" Culling Timber of............ 17,632
56,949
Leaving a net increase of............................. \$373,091
4-A눌

The increase upon Excise is mainly in the item of spirits and tobacco, as may be secill 1, the following statement and by reference to the statistical summaries (as also $u$ suitement No. 13, upon pages 22 and 23.) The increased Revenue from spirits, as compared with preceding years, is due to the increased tariff and not to increasing consumption, while both increased duty and increased consumption have operated to bring about the increased Revenue derived from tobacco.

The following statement will show how the details of Excise Revenue accrued during the past year, compared with the four years ending 30 th June, 1872, '73, '74 and ' $\bar{\sigma}$ j respectively.

| 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Articlers, | 1872. | 1873. | 1874. | 1875. | 1876. |
| iSpirits................ ..................... | \$ $2,884,067$ | $\begin{gathered} \$ \\ 2,825,141 \end{gathered}$ | $\$$ $3,503,365$ | $\$$ $2,977,221$ | $\begin{gathered} \$ \\ 3,099,893 \end{gathered}$ |
| Malt Liquor................................ | 25,573 | 26,598 | 25,570 | 29,976 | 14,188 |
| Malt...... ...................... ............ | 319,391 | 358,332 | 354,765 | 351,386 | 327,709 |
| Tobacco.................................... | 1,252,487 | 1,013,557 | 1,401,271 | 1,434,778 | 1,775,460 |
| Petroleum | 233,996 | 237,777 | 274,439 | 268,553 | 285,553 |
| Manufactures Bond................... | 25,066 | 33,780 | 40,006 | 37,176 | 27,834 |
| Seizures.... ...... ......... ............... | 16,788 | 5,049 | 6,289 | 5,220 | 1,675 |
| Other Receipts... ........................ | b,010 | 12,962 | 6,877 | 6,043 | 6,975 |
| Tota ......... . ..................... | 4,762,378 | 4,513,196 | 5,612,582 | 5,110,353 | 5,538,277 |

Spirits.
In order to obtain a more satisfactory comparison it is necessary to consider the quantities of goods, subject to duties of excise, taken for consumption, rather than the amount of duty collected thereon, and to facilitate such comparisons the following statements shewing the consumption of each article have been prepared.

1 may here obsel ve that in order to meet the requirements of the law respecting whiglte and measures, which came into operation on the 1st July, 1875, the whole of
the quantities of liquids stated in the following tables have been reduced to standard or Dominion measure.


From the above it will be seen that the quantity of spirits taken for consumption during the past fiscal year is less than in any one of the previous years mentioned with the exception of $1874-75$, which it exceeds by 137,827 gallons while it is less than the average of the four preceding years by nearly 411,000 gallons.

Although the quantity taken for consumption in 1875-76 is somewhat in excess of that taken for consumption in the previous years, I do not attribute the increase to the increased quantity actually used, for it will be remembered that an extraordinary quantity of spirits was taken out of bond in 1873-74 in anticipation of the increased rate of duty. A considerable quantity of the spirits so taken out of warehouse was consumed during the following year.

Two statements are given in Appendices and shewing the consumption of goods subject to Excise, (including similar goods imported and paying customs duties), per head of the population in the several Provinces and in the Dominion during a series of years; as also the revenue per head derived therefrom. Although these statements are made by Provinces as well as for the Dominion, I do not attach much value to any but the Dōminion culumns; for the removal xiii
of duty paid goods from one Province to another is so extensive that the quantity of any article on which duty is collected in any Province is not even a near approximation to the quantity of that article consumed in that particular Province. The quantities of liquids in Appendix , are given in Dominion standard gallons, a comparison with similar statements which have been published with reference to the consumption of similar articles in the United Kingdom is therefore greatly facilitated

In the report which had the honor to submit to you last year I referred to the possibility of illicit distillation, reducing the apparent consumption of spirits in the Dominion. I regret to have to state that circumstances have occurred during the past year which go far to justify the fear I then entertained.

I have, of course, taken every possible means to press upon the Excise Officers of the Department the necessity of great vigilance, but it is very difficult for them to discover an illicit still, for unlawful distillation is usually carried on in out of the way places, and where the residents in the immediate neighbourhood are almost certain to be on the side of the illicit distiller.

Notwithstanding these difficulties, however, 20 stills were discovered and seized during the past year, but without doubt there are still a large number in operation which have so far escaped the vigilance of the officers of this Department.

It has unfortunately happened that, in the greater number of cases where illicit stills have been seized, it has been almost impossible to convict the parties concerned. The majority of them, therefore, have escaped with no other inconvenience than the loss of their apparatus, the value of which would ususlly be covered by the daties to which the spirits produced by one day's operations would be subject.

In view, therefore, of the greatly increased temptation to illicit manufacture both by the enhanced rate of duty and by the suppression of a considerable portion of the legitimate trade in spirits in the Province of Ontario, it has, I submit, become necessary to consider the expediency of making the Excise laws for the Dominion somewhat more stringent as regards illicit manufacturers.

The quantity of spirits in bond at the commencement of the last fiscal year was greater by about halfa million gallons than at the commencement of any of the four previous years to which the above statement refers.

This was due to the circumstance above mentioned, and as a 'natural result the quantity manufactured in 1875-76 is less by $1,361,798$ gallons than the average of the four preceding years and 947,259 gallons than was manufactured in 1871-72.

The quantity remaining in bond at the end of the past fiscal year was 1,276,786 gallons, which is 4,602 gallons in excess of the average quantity remaining in bond at the end of the four preceding years, and 596,542 gallons less than the quantity in bond at the commencement of the year. Under these circumstances, and in the absence of any disturbing cause, we should be justified in the conclusion that in the
present year the quantity taken for consumption will be in excess of 1875-76; but up to the present time the quantity so taken shows a decrease of 164,692 gallons-an additional evidence that the danger of loss to the revenue from illicit distillation, referred to above, has been realized, as is also the fact that the number of illicit stills seized during the past fiscal year, as shown on Statement below, has been increased by nine additional seizures during the first quarter of the current year.

Statement showing the number of Illicit Stills seized during the Fiscal Year ended 30th June, 1876, with names of Owners and Schedule Value.


Statement showing the number of Illicit Stills seized from 1st July to 30th September, 1876, inclusive, with names of Owners and Schedule Value.


The quantity of spirits exported during the past year has been little more than mominal, amounting to 83,037 gallons. There has also been a large decrease in the quantity of spirits used in bonded manufactures.

Malt and Malt Liquor.
The following statement shows the transactions in malt during the year ending. 30th June, 1876, and the four preceding years:

| Fiscal Year. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Exported. |  |  |  |
|  | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | \$ |
| 1871-72........ | 9,782,518 | 42,479,199 | 29,981,647 | 8,765,786 | 132,845 | 13,381,439 | 319,391 |
| 1872-73........ | 13,381,439 | 44,133,995 | 33,955,694 | 10,193,631 | 504,068 | 12,862,041 | 358,332 |
| 1873-74....... | 12,862,041 | 31,802,989 | 33,369,016 | 6,233,367 | 412,292 | 4,650,355 | 354,765 |
| 1874-75........ | 4,650,355 | 41,039,986 | 33,016,082 | 4,677,960 | 33,360 | 7,962,939 | 351,386 |
|  | 40,676,353 | 159,456,169 | 130,322,439 | 29,870,744 | 1,082,565 | 38,856,774 | 1,383,874 |
| Aunual average of four years ended 1875....... | $10.169,088$$7.145 ., 939$ | $39,864,042$$51,876,385$ | $32,580,609$$30,693,447$ | $\begin{array}{r} 7,467,686 \\ 10,123,378 \end{array}$ | $\begin{array}{r} 270,641 \\ 7,190 \end{array}$ | $9,714,193$$19,015,309$ |  |
|  |  |  |  |  |  |  | 345,968 |
| 1875-76....... |  |  |  |  |  |  | 327,709 |

The abovo statement shows that the quantity manufactured during the past fiscal year is the largest quantity produced during any of the five years covered by the statement by $7,742,390$ lbs., while it exceeds the average production of the four years ending 30 th June, 1875 , by $12,012,343$ lbs.; but the quantity taken for consumption shows a very decided falling off, being only $30,693,447 \mathrm{lbs}$., a decrease, as compared with the average for the preceding four years, of $1,887,162 \mathrm{lbs}$., and as compared with the previous year, of $2,322,635$ lbs.

The quantity exported, however, shows a marked increase, being 2,655,692 lbs. in excess of the average exports during each of the four years ending 30th June, 1875, and $5,445,418 \mathrm{lbs}$. in excess of the quantity exported during the year ended 30th June, 1875.

The quantity remaining in bond on the 30th June, 1876, was considerably more than double the quantity at the commencement of the year, being $19,015,309 \mathrm{lbs}$ as compared with 7,962,939 lbs. in bond on the 1st July, 1875.

Of the quantity of malt used during the last fiscal year, $27,980,256 \mathrm{lbs}$. were used in the manufacture of malt liquor, and $2,406,152 \mathrm{lbs}$. in distilleries; but of the whole revenue collected from malt, $\$ 5,383.94$ was refunded to brewers who used sugar, syrup or "glucose" in combination with malt, and who, therefore, paid a duty of 3.9 cents per gallon on the beer produced; and $\$ 2,171$ has been refunded under the Act 31 Vict., cap. 8, as a drawback of malt duty on malt contained in 77,765 gallons of
beer exported. After deducting these items, it appears that the net revenue from malt used by brewers is $\$ 272,247.62$, to which is to be added the duty collected on malt liquor partly produced from sugar, $\$ 6,363.28$, making $\$ 278,610.90$ collected from malt and malt liquor ; add to this $\$ 24,061.52$ collected for malt used by distillers, and $\$ 28,375$ for licence fees, and we have a total of $\$ 331,047.42$ as the net product of the Excise on malt and malt liquor. The net amount collected from the same tax in $1874-75$ was $\$ 376,909$; the average during the preceding four years, including licence fees and duty on malt liquor, having been $\$ 339,533.60$ per annum.

With reference to the refund of duty on malt contained in beer exported, the Department had reason to believe that it had become necessary to deal more strictly with the brewers in this matter, as the claims made for refunds had increased from time to time in proportion to the quantity of beer. Under these circumstances departmental regulations were made under authority of the Act 31 Vict., cap. 8, sec. 109, by which the quantity of malt is ascertained by an analysis of a sample of beer exactly as it is ascertained by the Inland Revenue authorities of the United Kingdom. These regulations were submitted to and approved of by the Honorable the Treasury Board, and have now been in force a sufficient length of time to show that the revenue will be greatly benefitted thereby.

As it was not only possible but probable that the method of determining original gravities for the computation of malt drawbacks as prescribed by the British law and regulations, would be challenged as inapplicable to the determination of the original gravity of beer brewed in Canada from Canadian malt; and as it might be alleged that difference in the climate and quality of malt would require a modified mode of proceedure, a series of experiments were undertaken in order that the system followed in Britain might be fairly tested as to its applicability to our wants here.

These experiments occupied a considerable time and were carefully conducted, the more important under my own immediato supervision. I have, therefore, no hesitation in saying that the method of analysis described in the Departmental regulations, and which is founded on the English law, will produce, when applied to beer brewed in Canada, results as equitable as when applied to beer brewed in Britain. The particulars of these experiments are given in Appendix $\mathbb{C}$.

It may be proper to state that the English law gives a malt drawback computed on the degrees of original gravity and the "factor" given in this regulation by which these degrees of original gravity are reduced to pounds of malt does not, therefore, appear in the English regulations. It has been arrired at by calculations based on the published results of brewing in England and checked by the experimental brewings above referred to. It is, of course, quite possible that some Canadian brewers may fail to obtain from a given quantity of malt an extract equal in weight to what is obtained by tho best English brewers. This is a question of skill, and obriousiy it would be inexpedient for this Department to base its recgulations on the result. of incomplete and imporfect working by unskilful operators.

## Tcbacco.

The transactions in manufactured tobacco of all descriptions, stated in pounds, during the five years ended 30th June, 1876, are shown in the following statement :

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year ended 30th June. |  |  |  | Exported. |  |  |
|  | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |
| 1871-72..................... | 3,048,594 | 7,470,394 | 7,863,583 | 701,763 |  | 1,953,642 |
| 1872-73...................... | 1,953,642 | 6,451,119 | 6,264,208 | 640,458 | 9,548 | 1,490,547 |
| 1873-74... .................. | 1,490,547 | 8,805,276 | 8,484,193 | 483,357 | 12,989 | 1,315,284 |
| 1874-75...................... | 1,315,284 | 9,567,152 | 6,575,443 | 359,809 | 16,690 | 3,930,494 |
| Annual average of foul years ended 30th June, 1875 $\qquad$ | 7,808,067 | 32,293,941 | 29,187,427 | 2,185,387 | 39,227 | 8,689,967 |
|  | 1,952,016 | 8,073,485 | 7,296,856 | 546,346 | 9,807 | 2,172,492 |
| 1875-76...................... | 3,930,494 | 7,168,446 | 8,353,955 | 630,492 | 5,802 | 2,108,691 |

To the above quantities are to be added the quantity of leaf taken for consumption in a raw state during the same years, which will give the following additional columns :

| - | 8 |  | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: |
|  | Raw Leaf taken for Consumption. |  |  |  |
|  | Canadian. | Foreign. |  |  |
|  | Lbs. | Lbs. | Lbs. | \$ |
|  | 52,486 | 260,031 | 8,176,100 | 1,252,487 |
|  | 50,408 | 255, 223 | 6,569,839 | 1,013,557 |
|  | 113,797 | 277,634 | 8,875,624 | 1,401,271 |
|  | 65,529 | 228,172 | 6,869,144 | 1,434,778 |
|  | 282,220 | 1,021,060 | 30,490,707 | 5,102,093 |
| Annual average of four years ended 30th June, 1875 1875-76. | 70,555 | 255,265 | 7,622,676 | 1,275,523 |
|  | 11,932 | 158,272 | 8,524,159 | 1,775,450 |

From the above it appears that the production of manufactured tobacco during the past fiscal year has been less than in the previous fiscal year by $2,398,706$ lbe., xviii
and less than the annual average of the four years ended 30 th June, 1875, by 905,039 ${ }^{l}{ }^{\text {bs. }}$; but the quantity taken for consumption during the year ended 30th June, 1876, is greater than the quantity taken during the preceding year by $1,778,512$ lbs., and greater than the average quantity taken during the four preceding years by $1,057,0991 b s$

During the past fiscal year the stocks in warehouse have been reduced from $3,930,494$ lbs. to $2,108,691 \mathrm{lbs}$., a difference of $1,821,803 \mathrm{lbs}$., the quantity in ware. house at the end of the past fiscal year being $63,801 \mathrm{lbs}$. less than the average quantity in warehouse at the end of each of the four years ending 30 th June, 1875.

The above figures should indicate that the quantity taken for consumption in excess of the normal requirements of the trade in 1873-74 have been worked out, and that the transactions of the current year will not be materially different from the transactions of 1875-76.

## Cigars.

In continuation of the tabulated statement which I had the honor to submit last year, illustrating the effect of the re-arranged and increased Customs duty levied on cigars, I beg now to submit the following statement:-

| Years. | Total Oonsumption. | Customs Duty. | Excise Duty. |
| :---: | :---: | :---: | :---: |
| 1869 | ${ }_{225,760}$ |  |  |
| 1873 .................................................. | - 2204,609 |  |  |
| 1874 ....................................................... | 676,429 | 45 do | 40 do |
| 1878 ..................................... 1 | +488,273 | 70 do | ${ }_{40}^{40}$ do |
| 186 ..................................... | 507,866 | 70 do | 40 do |

The total consumption in 1876 shows therefore an increase of about 4 per cent. as"compared with 1875, all of which took place upon imported cigars, the consumption of which shows an increase over that of 1875 of 11 per cent. while that of Canadian cigars remained stationary.

Of the whole quantities entered for consumption, the proportions have been

$$
\begin{aligned}
& \text { In 1869, imported......... ............................. } 47 \cdot 14 \text { per cent. } \\
& \text { Canadian...................................... 52.86 " } \\
& \text { In 1873, imported..................................... } 72.09 \text { " } \\
& \text { Canadian...................................... 27.91 " } \\
& \text { In 1874, imported..................................... 64.64 ، } \\
& \text { Canadian...................................... 35.36 " } \\
& \text { Canadian...................................... 64.00 " } \\
& \text { In 1876, imported...................................... } 38 \cdot 48 \text { " } \\
& \text { Canadian...................................... 61.52 " } \\
& \text { xix }
\end{aligned}
$$

## Petrolevin.

The following statement exhibits the transactions in petroleum for the year ending. 30th June, 1876, and the four previons years:-


The above statement shews that the quantity of petroleum manufactured in 1875-76 exceeds the quantity manufa'ctured during the previous year by nearly 829,000 gallons, but it falls short of the average quantity during the four preceding years by $3,180,526$ gallons. The quantity taken for consumption, however, is in excess of the quantity taken during the previous year by 270,691 gallons, and of the average quantity taken during the four preceding years by 539,275 gallons.

The quantity entered for exportation remains still merely nominal, amounting only to 47,246 gallons in 1875-6 as against 1,140 in 1874-5, and an average of 3,904,493 during the four preceding years. As duty is now paid on petroleum supplied for Government account, none has been entered free for light-house purposes. This, to some extent, accounts for the increased quantity returned as taken for consumption.

It will be seen that the quantity in bond on the 30th June, 1876, is in excess of the quantity in bond at the commencement of the year by 164,148 gallons, while it is less than the average quantity in bond at the end of each of the previous four years by 190,261 gallons.

## Manufactures in Bond.

The revenues derived from duties levied on goods manufactured in bond, chiefly vinegar and methylated spirits, are as follows :-

$$
\begin{aligned}
& \text { 1871-72 ................................................................... \$25,065 } \\
& \text { 1872-73....... ........................................................... 33,780 } \\
& \text { 1873-74.................................................................. 40,006 } \\
& \text { 1874-75 .................... . . . . . . . . . . . ............................. . . 37,176 } \\
& \text { 1875-76 . . . . . . . . . . . . . . . . . . . . . . . . . . ....................... . . 27,834 }
\end{aligned}
$$

and call for no special comment.

## Public Works.

During the past fiscal year there has beeu a further decline in the revenues collected from Public Works by this Department. This decline is $3 \cdot 8$ per cent as compared with the preceding year. The following comparative statement for 1874-75 and 1875-76 shows the accrued revenue from each class of works :-

| - | 1874-75. | 1875-76. | Increase per cent. | Decrease. per cent. |
| :---: | :---: | :---: | :---: | :---: |
| Canal Tolls, \&c................. ................. .......... | 392,407 | 372,264 |  | 5 |
| Slides and Booms ...................... ........ .......... | 123,349 | 101,868 |  | 17 |
| Hydraulic and other Rents ............................... \%inor Public Works ............................ | 37,804 5,138 | 67,444 5,450 | 82 6 |  |
|  | 558,698 | 537,026 | ................ | $3 \cdot 8$ |

Canals.
The decrease above indicated has been general except that there has been a slight increase in the revenue collected at Chambly and in the tolls collected on St. Peter's Canal, Cape Breton. By the following comparative statement of the revenues derived from each canal, it will be seen that the Welland Canal is again more seriously affected than any of the others.


The following figures indicate the several classes of articles upon which the revenue has decreased on the Welland Canal :-


From the above it appears that vessels and all classes of staple products have decreased in quantity, and that manufactured goods and merchandise have alone given an increase.

The quantity of grain transhipped at Port Colborne in 1876 and the two previous Jears is given below. The total number of grain-laden vessels lightened at Port Colborne in 1876 was 84 as against 135 in the previous year. The number entering unladen without entering the canal was 40 as against 62 in 1875. The quantity of grain lightened was as follows :-


The quantity of grain discharged in the port from vessels which did not enter the canal was as follows :-

| —— | 1873. | 1874. | 1875. | 1876. |
| :---: | :---: | :---: | :---: | :---: |
|  | Centals. | Contals. | Centals. | Centals. |
| Wheat........................... ......... ........ ............. | 738,600 | 539,620 | 653,820 |  |
| Corn...... ....... ............ ............. .............. ..... | 622,300 | 659,400 | 145,800 | 247,040 |
| Barley ................................... ..................... |  |  | 9,440 |  |

Canal Statistiecs for the Season of Navigation.
In previous reports some comparative statements were introduced respecting the business transacted on the Dominion canals during the season of navigation as compared with the business done on the canals of the State of New York and on the competing railways leading to tide water.

I purpose preparing similar statements for the season now closing, but it is very difficult to obtain the returns necessary for these comparisons in sufficient time to give them due consideration, and thereafter complete the printing. of the report in time for the meeting of Parliament. Under these circumstances it is considered expedient to submit with the statistical returns of the Dominion Canals. for the season of navigation a supplementary report containing the comparative statements above referred to.

## Slides and Boons.

The revenue accrued from these works in 1875-6 amounts to $\$ 99,064$. In 1874-5 it amounted to $\$ 121,627$, shewing a decrease of $\$ 22,563$. The uncollected balances have increased from $\$ 201,576$ due on the 1st July, 1875, to $\$ 217,639$ due on the 30 th June, 1876. As stated in the last report, the greater part of these balances consist of claims against the mill owners at the Chaudiere, which they dispute, and the payment of which has been delayed from time to time. There are, however, considerable sums in arrear as to which there is no question, but for the payment of which. time has been asked.

## Hydraulic Rents and Minor Peblic Works.

The outstanding balances due on amount of hydraulic rents have been augmented during the past year from $\$ 180,899$, due on the first day of July, 1875, to $\$ 193,199$, due at the end of the last fiscal year. The rents accrued during the year amounted to $\$ 57,444$, of which only $\$ 45,165$ had been paid when the accounts were closed.

The unsatisfactory character of this account is mainly due to disputes as to the supply of water, and in some measure to a misconception of the Order in Council passed on 15th December, 1874, ordering certain abatments upon conditions therein stated. There are, however, among these claims large sums which are clearly due to the Government but which the parties will probably defer paying until compelled thereto by process of law.

## Culling Timber.

The fees accrued for culling timber in $1875-6$ amounted to $\$ 71,952$. In the previous year they amounted to $\$ 89,697$. Of the amount due in the past fiscal year only $\$ 57,125$ was collected. The outstanding claims in this branch of the service now amount to an aggregate of $\$ 33,901$. The law does not give the Government a lien on the timber for the Caller's fees and there may therefore be some difficulty in collecting the whole of the amount above stated.

## Bill Stamps.

The revenue from this source in $1875-6$ was $\$ 226,959$, as compared with $\$ 244,303$ received during the previous year. There has therefore been a falling off in this branch of the revenue of $\$ 17,444$.

## Weights, Measures and Gas.

An account of expenditures and receipts in connection with this service will be found at p. 36. The Acts 26 Vic., cap. 47 and 48 came into operation on the 1st of July, 1875, but owing to the large amount of work involved in making the preliminary arrangements but little was accomplished towards the practical work of inspection during the past fiscal year.

It will be my duty to prepare a special report in relation to this service, and as it is desirable to give in it as much information as possible as to the practical working of the law, I propose to include in it the transactions of the first six months of the current fiscal year.

## Inspection of Staple Articles.

During the past year, eight Boards of Examiters were constituted :-
The particulars are given in Appendix 7 to this report.
A list of certifieates granted during the past year will be found in Appendix $\mathbb{E H}_{5}$ and in the following Appendix $\& f$ will be found a complete list of Inspectors and Deputy Inspectors, authorized to act prior and up to 1st November, 1876.

It is still found very difficult to obtain returns from this class of Inspectors in a satisfactory state, so much so that it became necessary to go to press with the Department report without including them. A general summary of such as have been obtained will be found in Appenaix 矮 to this report. It is hoped that before the end of another year, the Department will be able to obtain more satisfactory results in relation to this service.

## Prevention of Adulteration of Food.

The Act 37 Vict. Cap. 8, was assented to on the 26th May, 1874, and ihe first appointment under it was made on the 14th June, 1875, and subsequent ones were made on the 9th March, 15th March and 6th June, 1876.

During the past fiscal year the expenditure under this Act was $\$ 2,601$. This was chiefly for the outfit of laboratories, and payment of retaining fees to Analysts. Samples of food were only analysed in Montreal.

As it appears to be desirable that the latest available information on this subject should be printed, it is proposed to incorporate in a supplementary report the transactions of the first half of the current fiscal year so soon as the details can be collected.

## Outside Service.

Since the administration of the laws respecting the Inspection of staple commodities, the inspection of weights and measures and gas, and the prevention of the adulteration of food, have been added to the duties of this Department, the outside service has been greatly augmented. The total number of officers of all grades who are now accountable to the Department for the performance of their duties is
Of these there are :-
Officers receiving regular salaries. ..... 366
Officers paid by fees ..... 227
Or classifying them with reference to the branches of the eervice to which theybelong, there are :-
Officers of Excise. ..... 201
Collectors \&c., of dues on Public Works. ..... 48
Supervision of Culler's Office. ..... 18
Licensed Cullers ..... 81
Deputy Inspectors of Weights and Measures.
91
91
Inspectors of Gas. ..... 8
Food Analysts.
4
4
Inspectors of Staple Commodities
32
32
Deputy Inspectors of Staple Commodities ..... 110Of the above the following classes of officers, by the terms of their appointment,are required to pass such examinations as may be prescribed by Departmentalregulations:-
Officers of Excise ..... 201
Inspectors and Deputy Inspectors of Weights and Measures. ..... 90
Inspectors of Gas ..... 8

In the supplementary report of $187 t$, full details were given of the examination held previous to 30 th June, 1874. Since that date examinations hare been held at Montreal, Quebec, Toronto, Ottawa, Halifax, N.S. and St. John, N.B., and 81 candidates hare been classified, that is:-

22 have obtained first-class certificates.
22 do second-class do

25 do third-class do
12 have failed to obtain any.
There have also been examinations for special class Excisemen at Ottawa, Quebec and Toronto.

At these examinations 23 candidates presented themselves, and of them 22 succeeded in passing.

These special clase examinations have been of great adrantage to the service, and the number authorized by the Order in Councic of 10 th July, 1873, is now completed with one in waiting to fill the first racancy. As the examination papers for the special class are very different from the papers used at the ordinary examinations they are printed at large in Appendix $\mathbb{E}$, as are also a set of questions used at the last ordinary examinations in Appendix

Full statistical cletails of the examinations above referred to, will be found in


Up to the present time no examination of Iuspectors of Weights and Measures or Gas have been held, as it is considered desirable to give the officers appointed in that service a fair opportunity for acquiring a knowledge of their duties.

In the supplement to the Departmental report for 1874 , above referred to, I had the honour to submit the considerations which had induced the Department to requirecertain classes of its officers to submit to these examinations. To what was then adranced it may now be added that each year's experience affords additional proof that the public service derives great advantage from this regulation.

It will be observed that in the schedule of officers who have passed examinations during the past year, several names oecur which had appeared in previous examinations These are men who were not satisfied to remain in the lower classification, and who therefore sought the opportunity for taking higher honors, and I look upon this evidence of the value attached to the position obtained in this classification as important testimony in support of the views entertained by the Department.

All of which is respectfully submitted,

> I have the honour to be, Sir, Your obedient servant, $$
\text { A. BRUNEL, }
$$

## Inland Revence Department, Ottawa, 15th November, 1876.

APPENDIX 2
Table shewing the Annual Consumption per head of the undermentioned Articles paying Excise or Customs daties in the respective Provinces and in Dominion since Confederation.

appendix 3 ．
Table shewing the Revenue per head derived annually since Confederation from the undermentioned Articles paying Excise or Customs duties in the respective Provinces and in the Dominion．

| Yeam． | Oxtario． |  |  |  |  | Qовво． |  |  |  |  | Nova Sooris． |  |  |  |  | Nat Bronawros． |  |  |  |  | Pajion Edmabd islatio． |  |  |  |  | Maxitoza． |  |  |  |  | Batrise Oolunas． |  |  |  |  | Dommox． |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 号 } \\ & \text { 落 } \end{aligned}$ | 甾 | 最 | 宩 | 年 | $\frac{. \dot{g}}{\stackrel{y}{2}}$ | 忘 | $\stackrel{\dot{a}}{\dot{B}}$ | 产 | 穊 |  | 旡 |  | － | 宮 | $\begin{aligned} & \text { 亮 } \\ & \text { 官 } \end{aligned}$ | 免 | 官 | 安 | 穊 |  | 勉 | $\dot{\text { ed }}$ | 宮 | 宮 | 営 | 褭 | － |  | 富 | $\begin{aligned} & \text { 竧 } \\ & \text { 员 } \end{aligned}$ | 旡 | 星 | \％ <br> \％ <br> \％ <br>  | 年 | 妾 | 发 | \％ | 安 | 宮 |
|  | \＄ | \＄ | ${ }^{*}$ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | \％ | ＊ | \％ | \＄ | ＊ | \＄ | \＄ | ＊ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | ＊ | 8 | \＄ | ＊ | \＄ | \＄ | ¢ | ＊ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ |
| 1886．．．．．．．．．．．．．．．．．．．．．．． | 1.109 | 114 |  | ． 163 | ． 06 | 1.001 | $\cdot 111$ | －094 | ． 218 | ${ }^{0} 08$ | 894 | ． 03 | 045 | ${ }^{112}$ | ${ }^{0} 48$ | 870 | ．030 | ． 068 |  | ．039 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.028 | ${ }^{097}$ | 043 | ${ }^{176}$ | 014 |
| 1890．．．．．．．．．．．．．．．．．．．．．． | 841 | ． 110 | 014 | $\cdot 169$ | ${ }_{0} 061$ | 666 | ． 082 | ． 074 | ． 217 | －007 | ． 706 | ． 057 | ． 030 | 200 | －045 | －786 | 049 | － 027 | $\cdot 216$ | 068 |  |  |  |  |  |  | $\cdots$ |  |  |  |  |  | $\cdots$ |  |  | ． 761 | ${ }^{093}$ | ${ }^{037}$ | ＇193 | 041 |
| 1870．．．．．．．．．．．．．．．．．．．．．． | －997 | ． 101 | 019 | ${ }^{2} 29$ | ． 105 | 1.016 | ． 078 | －099 | $\cdot 326$ | ． 20 | ． 652 | ． 055 | －034 | 244 | 043 | ． 957 | ${ }^{038}$ | ．035 | 287 | 057 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{962}$ | ${ }^{085}$ | 049 | $\cdot 259$ | ． 061 |
| 1871．．．．．．．．．．．．．．．．．．．．．．． | 1.090 | ． 122 | 021 | －265 | －130 | $1 \cdot 127$ | －82 | $\cdot 106$ | －431 | －015 | ．706 | ． 066 | ． 050 | －290 | － 045 | 1.079 | －039 | 048 | ${ }^{4} 45$ | ． 071 |  |  |  |  |  |  |  |  |  |  | ．．．．．．．． |  |  |  |  | 1.059 | ${ }^{093}$ | ${ }^{0} 56$ | 336 | －078 |
| 1872．．．．．．．．．．．．．．．．．．．．．．．．． | 1.182 | 135 | ${ }^{030}$ | ． 368 | ． 110 | 1.259 | ． 101 | $\cdot 134$ | ． 510 | ${ }^{035}$ | ． 765 | ． 057 | ． 054 | －386 | ${ }^{0} 46$ | 1.128 | －047 | ． 050 | 416 | 058 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1．16） | 108 | ．070 | 422 | 073 |
| 1873．．．．．．．．．． | 115 | ． 155 | ．033 | $\cdot 286$ | ． 135 | 1.258 | $\cdot 107$ | $\cdot 122$ | $\cdot 471$ | －019 | ．780 | ． 060 | ． 042 | $\cdot 251$ | 075 | 1.233 | ． 055 | ． 057 | $\cdot 347$ | －084 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.135 | $\cdot 120$ | ${ }^{066}$ | $\cdot 350$ | －084 |
| 1874．．．．．．．．．．．． | 507 | 154 | 042 | $\cdot 351$ | ． 154 | 1349 | ． 097 | $\cdot 162$ | ． 615 | ${ }^{032}$ | ${ }^{887}$ | ．059 | ． 056 | $\cdot 337$ | 079 | 1.255 | ． 053 | ． 075 | ${ }^{4} 4$ | 101 |  | $\cdots$ | ．．．． |  |  |  | $\cdots$ | $\cdots$ |  |  |  |  |  |  | $\ldots$ | 1．363 | $\cdot 119$ | ${ }^{.086}$ | 442 | 103 |
| 1876．．．．．．．．．．．．．．．．．．．．．．． | 50 | 140 | 033 | ． 379 | $\cdot 150$ | 1200 | ． 110 | －134 | ． 529 | ${ }^{\circ 29}$ | ${ }^{788}$ | ． 057 | ． 044 | ．333 | ${ }^{083}$ | 1.158 | ． 047 | －041 | －389 | － 104 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{1} 127$ | ${ }^{114}$ | ． 069 | 428 | －098 |
| 1876．．．．．．．．．．．．．．．．．．．．．．．． | $1 \cdot 258$ | 132 | ． 031 | $\cdot 44$ | ． 153 | 1.269 | －081 | $\cdot 153$ | ． 623 | ${ }^{039}$ | ${ }^{7} 46$ | ． 049 | ． 038 | －455 | －995 | 1.055 | ． 046 | 043 | ${ }^{4} 406$ | 111 | －976 | ${ }^{0} 46$ | ． 052 | 344 | ${ }^{115}$ | 776 | ${ }^{037}$ | 108 | ${ }^{684}$ | ${ }^{033}$ | 1.545 | ．254 | $\cdot 184$ | 1.003 | $\cdot 138$ | 1.182 | －098 | ． 075 | 513 | 105 |
| Aterage ．．．．．．．．．．．．．．．．．． | 39 | ． 129 | 025 | 293 | 112 | 1.127 | ． 094 | $\cdot 120$ | $\cdot 438$ | ${ }^{023}$ | 769 | －055 | 044 | 289 | ${ }^{062}$ | 1.058 |  | ． 050 | $\cdot 336$ | ． 077 | 976 | ${ }^{046}$ | ． 052 | $\cdot 344$ | ． 115 | ． 776 | ${ }_{0} 037$ | ． 108 | ． 684 | ${ }^{\circ} 93$ | 1.645 | 254 | 184 | 1.003 | 138 | 1.087 | 103 | 061 | ${ }^{318}$ | ${ }^{073}$ |

## APPENDIX

## MEMORANDUM RESPECTING THE PAYMENT OF DRAWBACK OF DUTY ON MALT CONTAINED IN BEER EXPORTED.

1. Under Section 109 of the 31st Vic., Cap. 8, a licensed brewer who exports malt liquor of his own manufaciure is entitled to receive a drawback equivalent to the duty on the malt contained in the beer so exported, and the quantity of malt contained in such beer is to be determined in such manner as may from time to time be directed by departmental regulations in that behalf.
2. Under the provisious of the law above cited considerable sums have from time to time been paid to brewers by way of drawback, and the regulations under which the amount so paid has been determined have been based upon the returns made by the brewers, under the provisions of the law, of the quantity of malt used and the beer produced therefrom.
3. There has been, however, a tendency to increase the demand for refunds is proportion to the quantity of beer exported, and this continually increasing tendency made it evident that some more stringent regulations were necessary.
4. Refunds are granted under the English Excise law, of the daty on malt contained in beer exported from the United Kingdom, but there the amount of the refund is determined by the analysis of samples of the beer upon which the refund is claimed. Heretofore I have not felt myself in a position to recommend a similar course because it requires considerable technical skill to carry out the analysis in a reliable manner and this Department has but few oficers who would be capable of performing that duty.
5. Last winter, however, the claims for refund were in some cases so exorbitant in proportion to the quantity of beer exported that I deemed it absolutely necessary to take some decided action in order to avoid the payment of fraudulent claims. I devoted considerable time to the question and having, as I believe, arrived at a satisfactory solution of the difficulty, departmental Circular 109, of which a copy is annexed hereto was issued.
6. As soon as we had occasion to apply the rules laid down in this circular, wo discovered that in almost every case the amount of malt determined thereby fell con siderably short of the brewers' claim, and as it appeared possible that there might be a material difference between the quality of English and Cunadian malt. In order to satisfy myself on this point I instituted a serios of experiments of the following nature :
a. I arranged to have special brewings made in two separate breweries, oach under the immediate and rigid supervision of an officer of this Department, possessing sufficient skill to enable him to determine the quantity of Malt used, to watch the process of browing and to determine the quantity of beer produced from the malt used. After these browings had been completed xxxi
several samples of the beer produced in each case were analyzed and the result compared with a practical determination arrived at the brewery.
b. I procured 100 lbs . of malt which I divided into two equal parts and made a separate brewing from each part. Both these brewings were caried on under my own immediate supervision as to the quantities of malt used, the process, and the quantity of beer produced. A sample of each of these brewings was then analyzed and the result compared with my personal knowledge of the quantity of malt contained in each gallon of beer produced.
$c$. I ointained from a brewer in this city, who has no interest in the question, a sample of beer made by him and a statement of the quantity of malt contained in it which was verified by the officer in charge of the brewery. This sample was similarly analyzed and the resu!t compared.
7. The whole of the above experiments confirmed conclusively the correctness of the a ales hid down in the circular. I do not assert that they produced results absolately correct, but the variation of the results obtained by the analyses from the kinwn quantities of malt contained in the samples was so small as to be unworthy of moice atd certainly no more than might be anticipated from variations in the quality of mate used.
8. The correctness of the principles laid down have been further confirmed by the results asreeing in some cases with the claims made, and notably in the case of a clam made by a brewer for a drawback on a quantity of malt equivalent to 3 lbs per gathon, whereas the result of the analyaes of the samples sent shewed an average of 3.82 lis. per gallon, and from this I infer that this person had made a minimum claim in view of the provisions contained in section 8 of the circular above referred to.
9. Under all these circumstances I sulmit that the regulations laid down in the circular attached hereto should be confirmed and maintained and that, for the future, the Departmont will be justificl in assuming that where the clain for refund is made considerably in excess of the quantity shewn by the process referred to, such claim shonid be held to be a fraudulent one and the regulations laid down in section 8 of ciscalar 109 should be enforeed.
10. Althouyh, according to the law above quoted, Departmental regulations in this matter are sufficient, I deem it desirable that the whole case should be laid before the Treasury Board for their approval, as I apprehend that the parties who have made or who may hercafter make excessive claims will endeavor to have the regulations ignored and may for that purpose appeal to the Government against the Department; and further I submit that a regulation which is known to have received the approval of the Board will possess greater value than one which only emanates from this Department.

Respectfully submitted,
A. BRUNEL,

Commissioner.
Departaent of Inhand Revenue, June 2:3, 1876 .

Department of Inland Revenue, Ottawa, February 19, 1876.

Sir, - With reference to the allowance of drawback of duty of malt contained in malt liquor exported, the following departmental regulations are to be obserred :-

1st. The brewer who proposes to export malt liquor must give notice of his intention to do so upon Form No. C. 5.

2nd. In addition to the sample of the malt liquor to be exported, referred to in the form of notice above-mentioned, an officer of this Department must take an independent sample of it in such manner as to ensure his obtaining a fair average quality. The sample to be taken in each case must not be less than one quart, half of which is to be forwarded to this Department with such precautions as will protect it from deterioration either by heat or by cold. Probably the best method to secure this will be to pack the sealed bottle containing the sample in a small box with sufficient dry sawdust round it for its protection.

3rd. Every sample taken as above required must be sealed and must have attached to it a label bearing the number of the entry and the number of the claim for draw. back made on Form No. C. 6, with such other particulars as may bo necessary for identifying it.

4th. The entry will be passed for export in the usual way and, so soon as the exportation has been effected in the manner set forth in the warehouse regulations, the declaration on Form No. C 6 must be made by the brewer claiming the drawback and sworn to in accordance with tho terms of the jurat attached thereto.

5 th. The quantity of malt contained in the beer so exported will be finally determined by an analsis of the samples taken as above required whereby the original gravity of the worts from which the beer was produced will be determined.

6th. Tho Analysis will be as follows :-
(a) A definite quantity by measure of the sample will be distilled, and the distillate and the spent beer respectively will be made up with distilled water, each of them to the original measure of the beer before distillation.
(b) The specific gravities of the distillate so made up to the measure of the beer distilled will be taken.
(c) The specific gravity of the spent beer or extract so made up to the volume of the beer distilled will be ascertained.
(d) Tho number of degrees and parts of a degree of specific gravity by which the distillate is found to be less than the specific gravity of distilled water will be deemed to be the degree of spirit indication.
(e) The degrees of original gravity, set forth in the accompanying tables opposite the spirit indication found as above, will be added to the specific gravity of the spent beer or extract as above ascertained and the specific gravity s found shall be deemed to be the original gravity of the worts.
(f) The degrees of original gravity found as above described in excess of the specific gravity of distilled water will be multiplied by the factor .045 , and the product thus obtained will be deemed to be the number of pounds of malt used in the production of one gallon of beer.
(g) All the weighings made for determining specific gravities as above mentioned are to be based upon the temperature of $60^{\circ}$ Fahrenheit.
Example.
Specific Gravity of Distillate........................................ . 99096
do do Spent Beer or Extract...................... 1.0155
*Spirit Indication . $00904=$ Original Gravity per Table... 39.1
Add Specific Gravity of Extract orer 1.0000................... 15.5
54.6

And $54.6 \times .045 \quad 2.457 \mathrm{lbs}$. Mailt per gallou.
7th. The analysis as above detailed will be made at the place where the beer is exported, provided there are officers of the Department sufficiently instructed to carry it out properly. In the meantime, or in the absence of such competent officers, the analysis will be made at Ottawa, by the officers of the Department of Inland Revenue there, and the allowance for drawback will be made in accordance with the original gravity so determined.

8th. Brewers who fill in the declaration as to the quantity of malt contained in the beer on which they claim drawback in excess of the quantity determined in the manner above described will forfeit their claims to the drawback.

9th. When malt liquor is exported in bottles, the actual capacity of the bottles must be determined in a satisfactory manner by taking a sufficient number promiscuously from the whole lot to obtain a fair average, and estimating the whole quantity by the result of measuring those so selected, and the bottles containing the samples of malt liquor taken in such cases will be considered as a test of the average capacity of the bottles, as well as of the quantity of malt contained in the beer.

> I remain, Sir,
> Your obedient servant,
A. BRUNEL,

Commissioner.

[^3]SCIIEDULE
Containing a Table to be used in Determining the Original Specific Gravity of Worts of Beer.

| Degrees of Spirit Indication. | Degrees of Original Specific Gravity. | Degrees of Spirit Indicatino. | Degrees of Original Specific Gravity. | Degrees of' Spirit Indication. | Degrees of Original Specific Gravity. | Degrees of Spirit Indication. | Degrees of Original Specitic Gravtiy. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| . 1 | . 3 | 4.1 | 15.5 | 8.1 | 34.3 | 12.1 | 54.9 |
| . 2 | . 6 | 4.2 | 16.0 | 8.2 | 34.8 | 12.2 | 55.4 |
| . 3 | . 9 | 4.3 | 16.4 | 8.3 | 35.4 | 12.3 | 55.9 |
| . 4 | 1.2 | 4.4 | 16.8 | 8.4 | 35.9 | 12.4 | 56.9 |
| . 5 | 1.5 | 4.5 | 17.3 | 8.5 | 86.5 | 12.5 | 56.9 |
| . 6 | 1.8 | 4.6 | 17.7 | 8.6 | 37.0 | 12.6 | 57.4 |
| . 7 | 2.1 | 4.7 | 18.2 | 8.7 | 37.5 | 12.7 | 57.9 |
| . 8 | 2.4 | 4.8 | 18.6 | 8.8 | 38.0 | 12.8 | 58.4 |
| . 9 | 2.7 | 4.9 | 19.1 | 8.9 | 38.6 | 12.9 | 58.9 |
| 1.0 | 3.0 | 5.0 | 19.5 | 9.0 | 39.1 | 13.0 | 59.4 |
| 1.1 | 3.3 | 5.1 | 19.9 | 9.1 | 39.7 | 13.1 | 60.0 |
| 1.2 | 3.7 | 5.2 | 20.4 | 9.2 | 30.2 | 13.2 | 60.5 |
| 1.3 | 4.1 | 5.3 | 20.9 | 9.3 | 40.7 | 13.3 | 61.1 |
| 1.4 | 4.4 | 5.4 | 21.3 | 9.4 | 41.2 | 13.4 | 61.6 |
| 1.5 | 4.8 | 5.5 | 21.8 | 9.5 | 41.7 | 13.5 | 62.2 |
| 1.6 | 4.1 | 5.6 | 22.2 | 9.6 | 42.2 | 13.6 | 62.7 |
| 1.7 | 5.5 | 5.7 | 22.7 | 9.7 | 42.7 | 13.7 | 63.3 |
| 1.8 | 5.9 | 5.8 | 23.1 | 9.8 | 43.2 | 13.8 | 63.8 |
| 1.9 | 6.2 | 5.9 | 23.6 | 0.9 | 43.7 | 13.9 | 64.3 |
| 2.0 | 6.6 | 6.0 | 24.1 | 10.0 | 44.2 | 14.0 | 64.8 |
| 2.1 | 7.0 | 6.1 | 24.6 | 10.1 | 44.7 | 14.1 | 65.4 |
| 2.2 | 7.4 | 6.2 | 25.0 | 10.2 | 45.1 | 14.2 | 65.9 |
| 2.3 | 7.8 | 6.3 | 25.5 | 10.3 | 45.6 | 14.3 | 66.5 |
| 2.4 | 8.2 | 6.4 | 26.0 | 10.4 | 46.0 | 14.4 | 67.1 |
| 2.5 | 8.6 | 6.5 | 26.4 | 10.5 | 46.5 | 14.5 | 67.6 |
| 2.6 | 9.0 | 6.6 | 26.9 | 10.6 | 47.0 | 14.6 | 68.2 |
| 2.7 | 9.4 | 6.7 | 27.4 | 10.7 | 47.5 | 14.7 | 68.7 |
| 2.8 | 9.8 | 6.8 | 27.8 | 10.8 | 48.0 | 14.8 | 69.3 |
| 2.9 | 10.2 | 6.9 | 28.3 | 10.9 | 48.5 | 14.9 | 69.9 |
| 3.0 | 1.07 | 7.0 | 28.8 | 11.0 | 49.0 | 15.0 | 70.5 |
| 3.1 | 11.1 | 7.1 | 29.2 | 11.1 | 49.6 | 15.1 | 71.1 |
| 3.2 | 11.5 | 7.2 | 29.7 | 11.2 | 50.1 | 15.2 | 71.7 |
| 3.3 | 12.0 | 7.3 | 30.2 | 11.3 | 50.6 | 15.3 | 72.3 |
| 3.4 | 12.4 | 7.4 | 30.7 | 11.4 | 51.2 | 15.4 | 72.9 |
| 3.5 | 12.9 | 7.5 | 31.2 | 11.5 | 51.7 | 15.5 | 73.5 |
| 3.6 | 13.3 | 7.6 | 31.7 | 11.6 | 52.2 | 15.6 | 74.1 |
| 3.7 | 13.8 | 7.7 | 32.2 | 11.7 | 52.7 | 15.7 | 74.7 |
| 3.8 | 14.2 | 7.8 | . 32.7 | 11.8 | 53.3 | 15.8 | 75.3. |
| 3.9 | 14.7 | 7.9 | 33.2 | 11.9 | 53.8 | 15.9 | 75.9 |
| 4.0 | 15.1 | 8.0 | 33.7 | 12.0 | 54.3 | 16.0 | 76.5 |

## APPENDIX

Boards of Examiners constituted during the Fiscal Yoar ending 30th June, 1876

| Place. ! | Article. | Examiners. | Remarks |
| :---: | :---: | :---: | :---: |
| Kingston ........................... ..... | Leather and Raw Hides.. | Wm. Ford. * Geo. Offord. John MäcKay. William Allen. W. P. Minnes. |  |
| Essex, Kent and Lambton.......... | Leather and Raw Hides.. | Wm. Fraser. David Pratt. Grandison Boyd Wm. Monteer. Thos. Snook. |  |
| Ontario and Durbam................. | Flour and Meal | James Anderson. <br> James Henry Hagerman Harrey M. Ross. Kdward Peplow: Henry Wade. |  |
| sion | Fish and Fish Oil........... | James McCutcheon. <br> 1). W. Crockett. <br> James Hemlaw. <br> John McDaniel. <br> Wm. Pride. |  |
| Shelburne ............................... | Fish and Fish Oil. | Joseph Watters. <br> Samuel Lock. <br> Jacob Lock. <br> Howard Lock. <br> Edward Capstick |  |
| Barrington................. ............ | Fish and Fish Oil | W. Robertson. IT. Nickerson. W. Sargent. W. H. Coffin. N. Banks. |  |
| Victoria......................... ........ | Fish and Fish Oil. | John W. Burke. John McDonald. John Mc Lean. Alex. Taylor. Angu: MicIver. |  |
| Gloucester, N. B....................... | Fish and Fish Oil | Win Taylor. Jos. Sevell. Jos. Poirrier. Peter Legere. Octave Haché. |  |

[^4]
## APPENDIX (F.

List of Persons to whom Certificates have been granted under Inspection Act of 1874, during the Fiscal Year ending 30th June, 1876.


List of Persons to whom Certificates have been granted under Inspection Act, \&e.-Continued.

| Certificate granted to. | Inspector or Deputy Inspector | Article. | Place. | By whom Certificate was granted. |
| :---: | :---: | :---: | :---: | :---: |
| Donald McKenzie.. | Inspector............. | Fish \& Fish Oil... | Shelburne......... | Chairman of Board of Exam |
| Neil McIntyre..... | Deputy Inspector.. | do ... | Richmond......... | do do |
| Alex. Mckillop ..... | do .... | do ... | do ...... | do do |
| Philip Gruchy...... | do ... | do ... | do ......... | do do |
| John McDonald..... | do ... | do ... | do ......... | do do |
| Anthony Oliver.... | do | do | do ........ | do do |
| James A. Boutilier | do | do ... | Lunenburg ....... | do do |
| David Morash........ | do ... | do ... | do ......... | do do |
| Peter Bontilier...... | do ... | do .... | do ......... | do do |
| George J. Coolin... | do ...1 | do | do ......... | do do |
| George Young..... | do | do | do ......... | do do |
| Joseph Coolin, sen | do | do | do ......... | do do |
| Joseph Cleveland.. | do ... | do | do ......... | do do |
| J. A. Matheson...... | Inspector... ........ | do | Victoria..... ...... | do do |
| Qeorge Fader....... | Deputy Inspector .. | do | do ........... | do do |

## APPENDIX

List of Inspectors and Deputy Inspectors of Staple Articles who have obtained Certificates and executed Bonds, and who were therefore empowered to act prior to the 31st October, 1876.


List of Inspectors and Deputy Inspectors of Staplo Articles, d.-Continued.


List of Inspectors and Deputy Inspectors of Staple Articles, \&c.-Continued.


## APPENDIX $\mathfrak{b}$.

## EXAMINATION FOR SPECIAL CLASS EXCISE OFFICERS.

CONDITIONS.
1st.-Candidates are not allowed to use any books or manuscript for reference
2nd.-They must not leave the room until the questions placed in their hands have been disposed of.

3rd.-The numbor of hours to be devoted for cach subject will be specified upon the Examination papers, and upon the expiration of the time so allotted, the papers, with such answers as the Candidates can give, must be given in. They should therefore refrain from occupying time upon questions with which they know themselves to be unacquainted.

4th.-When questions require arithmetical computation, the work must be given in full.

5th.-The answers must be given on separate sheets. The subject and number of question are in every case to bo prefixed.

6th.-The first sheet of questions is to be signed in full by the Candidate, to all other sheets his initials will suffice.

7th.-Wach Candidate will be assigned a number on entering upon the examination, and he must see that this number is attached to each sheet as harided in.

Otrawa, January 30th, 1875.

No. 1.
INLAND REVENUE BOARD OF EXAMLNERS.

INLAND REVENUE LAWS.
Time-1 Hour.

1. What Acts or parts of Acts govern Inland Revenve procedure?
2. What is the meaning of the term "Distillery" as interpreted by the Inland Revenue Act?
3. What process is necessary in order to obtain excise licenses and wherein is a bonded manufacturer exceptional to the general rule?
4. On procuring a license, what further action is requisite on the part of the manufacturer before he can legally commence operations?
5. In case of stopping for more than a week for purposes of repair or otherwise, what notice must be given before recommencing work?
6. By what methods may the duty upon spirits be charged?
7. What special provision is made as to the charge of duty when damaged grain is used, and what action is required on the part of the distiller in respect of it.
8. When do the duties accruing upon S. M. Returns become due and payable, and what action should the Excise Officer take in case a return should be tendered which is below the legal standard?
9. In what form should cisterns in malt houses be constructed?
10. Within what hours does the Inland Revenue Act confine the maltster as to steeping grain, and placing malt on the kiln, and what notice is required of his inten. tion to do either?
11. What is the principal gauge whereby the duty on malt is to be computed, and on what conditions is that to be set aside for another?
$1 \because$. How long may excisable goods, upon which the duty is not paid, remain in warehouse?
12. What provision is made for the proper stowage of casks and other excisable goods in warehouse?
13. Give an outline of the regulations established by Order in Council respecting the removal of spirits?
14. What provision is made by $3 \pm$ Vic., Cap. 15 , as to the "Fire Test" for petroleum?
15. May raw leaf tobacco be imported into Canada at any port of entry?
16. On what conditions may raw leaf tobacco grown in Canada be remored from the premises or farm on which it is grown?
17. How are bonds taken for raw leaf tobaceo warehoused to be conditioned ?

18. What is the object of malting grain, and what powerful agent is formed in the transformation of grain into malt?
19. What are the chief requisites to produce the germination of grain ?
20. In malting grain, how many operations are necessary, and name them in the order in which they occur?
21. How would you distinguish between barley which had been dried in a kiln and malt?
22. Does barley when malted increase in bulk; and is there also an increase in weight?
23. Suppose in guaging a couch you find 170,000 cubic inches, how many thousand cubic inches of malt would you oxpect by guage, and how many pounds weight?
24. How is the fitness of the grain to go on the kiln known; and what would be the consequence if germination was not stopped?
25. What is the minimum and maximum time necessary to convert barley into malt, and give the usual time taken for each operation?
26. At what time is the duty usually levied on malt, and what guages may the duty be calculated from?
27. In the conversion of one steep of barley into malt, how many guages is it necessary for an officer to take to prevent fraud?

No. 3.
malt Guaging.
Time-2 Hours.

1. What are tho main guages to be taken during the process of malting, with a view to the charge for duty?
2. How should the kiln guage comparo as to measure and weight with the dry srain guage?
3. In a stecp of 150,000 cubic inches of barley by dry guage, what quantities would you expect to find by the couch, floor and kiln guages respectively?
4. Assuming 5,000 cubic inches to be the average measurement of a cental of barley, what would be the weight of $2218 \cdot 132$ cubic inches? And if each 1,000 cubic incher were tound to weigh 22 thbs., what would then be the weight of $2218 \cdot 192$ cubic inches?
5. How would you proceed to determine the approximate weight of a large quantity of malt stored in a granary, in the absence of suitable appliances for weighing it within the time at your disposal?
6. In a floor of malt I find the sides to be $12,14,15$ and 18 ft . respectively, the last two forming a right angle; seven dips taken are as follows: $7 \cdot 2$ in., $5 \cdot 7 \mathrm{in}, 4 \times 3$ in., 5 in ., 6 in , and $5 \cdot 1 \mathrm{in}$. How many 1,000 cubic inches do these measurements represent?
7. In a cylindrical cistern having a drip of two inches, the diameter being 120 in., and the dip at highest side 60 in .: How many 1,000 cubic inches of barley does it contain when full, and what would you expect to find by

Couch guage,

Floor guage,
Dry malt guage?
8. How would you proceed to inch a cistern in the form of a frustum of a cone; What would be the contents in inches of the 13 th inch from the bottom, the cistern being of the following dimensions :

Top diameter, 64 inches.
Bottom, 73 '
Depth, 50 "

> No. 4. товассо. Time-2 hours.

1. What are the names of the different products of raw leaf tobacco when manufactured and subject to Excise duty in Canada?
2. Define what is meant by Cavendish tobacco?
3. Explain in as concise a manner as possible the process of cigar making?
4. Are stems made use of in the manufacture of Cavendish; if so, what process do they undergo previously to being use?
5. How many pounds of Cavendish tobaceo may be manufactured from 100 lbs. of raw leaf when the stems are used, and how many without?
6. When is the manufacture of Cavendish tobacco supposed to be completed, and What length of time is necessary to complete the manufacture of Cavendish from raw leaf?
7. What is meant by " Casing" tobacco, and what ingredients are generally used ?
8. $\mathrm{D}_{0}$ you think it difficult to keep a proper survey over a tobacco manufadory, and if so, give your reason?
9. How would you proceed to take stock in a tobaceo manufactory after six months, operations, in order to arrive at a tolerably correct conclusion as to the condition of affairs, and to what expedients might the manufacturer resort in order to hide frand?
10. To what (kept in obedience to Excise Regulations) would you have recourse $t^{t}$ ascertain approximately the stock of tobacco in process of manufacture, and to What extent would you expect to find the quantities so arrived at out of harmony With the results of an actual stock taking?
11. Explain what the debit and credit sides respectively of the No. 1 and No. 2 Stock Books and the Daily Record should contain, and how far the debit of one or
4-c
other of these should be checked by or be found in correspondence with the credit of another.

No. 5.

DISTILLATION.
Time-3 Hours.

1. In the distillation of spirits from grain which is not malted, how many operations are necessary-name them in the order in which they occur?
2. What is the minimum and maximum time necessary to complete the operations of mashing and fermentation respectively?
3. What kinds of grain are commonly used, and what proportions, in the manufacture of spirits?
4. When and where are the spirits tested and charged for duty?
5. In the ordinary supervision of a distillery, what are the principal daily precautions which should be taken by the officer in charge for the prevention of fraud?
6. Name the apparatus used, and the precaution which should be taken to prevent fraud in connection with the operation necessary to the completion of the manufacture of spirits, after the charge for duty has been made?
7. Describe the successive changes as regards the taste of the wash which occur during the process of fermentation?
8. What do you understand by the "attenuation" of beer or wash?
9. Suppose a tun of wash to become attenuated to the gravity of water, would you argue from this that all the saccharine matter had been converted into alcohol?
10. What causes may arrest the process of conversion?
11. If worts are allowed to remain in the fermenting tun for a considerable period after the available sugar has been converted, what change may be expected to take place?
12. Can absolute, that is pure anhydrous alcohol, be obtained by ordinary distillation?
13. Give approximately the specific gravities of water, proof spirit and alcohol a $60^{\circ}$.
14. What do you understand by the terms "Testing Alcoholic Value," "Special Tests" and "Testing for Duty," respectively?
15. Describe the method of obtaining the alcoholic value of a quantity of beer, by means of the ordinary apparatus used in distilleries worked with intermittent stills, without having recourse to the close receiver.
16. Preparatory to and during the above process, what precaution should be taken to insure obtaining a correct result?
17. Describe the method of taking a "Special Test," and state what special memorandum it is necessary to make in your official diary, in addition to the detailed record of the result of such test?
18. What special precautions are necessary in relation to this test?
19. Under what circumstances is it specially necessary to take the above test, and where should the result be recorded?
20. Describe fully the method of "Testing for Duty," and what precautions should be taken to ensure correct result?
21. Give the net product of the following charge, and state its alcoholic value :Charge, 430 gallons beer.
Entire contents of tun, 11,325 gallons.
Made from $15,000 \mathrm{tbs}$. grain.
Low wines preceding charge........... 50 Gals © $34 \cdot 4$ under-proof.
Product of charge
30 " $10 \cdot 3$ over-proof.
Low wines from charge distilled...... 53 " $41 \cdot 4$ under-proof.
22. How does a sudden mixture of alcohol with water affect the volume and tomperature of the mixture?
23. Describe the meaning of the term "Low Wines," and how they are treated ?
24. Is it necessary to have that portion of the apparatus, used in the re-distillation of low wines, secured, and if not so secured, how might the revenue be seriously affected?
25. When about to take a "Special Test" of tun No. 3, it was found that the product of two tuns was in close receiver, viz:--2,750 wine-gallons at $25 \cdot 9$ over-proof. After tun No. 3 was distilled there were 3,910 wine-gallons at $28 \cdot 4$ over-proof. What was the strength of the spirits produced from contents of the former tun?
26. Examine the accompanying return, (D. 16) and state at what dates, in accordance with the established order of use tuns Nos. and may be expected next to come into use.

## No. 6.

## sacciaromettr.

Time.-1 hour.

1. What is meant by the term "Specific gravity" applied to beer or wash and of what is it a criterion?
2. Explain how the stem of Bates' saccharometer is divided, and why the divisions are not equi-distant.
3. What part of specific gravity of water does each degree on the stem indicate?
4. What poise is it necessary to put on, in order to indicate at $O$ the specific gravity of water (at 60 degrees) and what would be tie indication on the stem if the weight marked 970 were used ?
5. What is the object of the tables accompanying Bates' saccharometer?
6. In the transaction of Inland Revenue business in Canada, which table is more frequently referred to ?
7. How is the pilot to be used
8. Suppose in testing a sample of worts at $60^{\circ}$ the instrument with the weight 1,060 attached floats with the linear division 10 nearest the surface,-what is the specific gravity of the worts, and how much per cent. is it heavier than water?
9. Find out by the tables the proper answer to the above question, if the temperature be $82^{\circ}$ instead of $60^{\circ}$.
10. How would you proceed to ascertain the quantity of malt in a given sample of beer.

No. $6 \frac{1}{2}$.

## USE OF HYDROMETER AND SPECIFIC GRAVITY CF FLUIDS

Time.-1 hour.

1. In what ratio are water and absolute alcohol combined in proof spirits.
2. What are the weight per wine gallon of absolute alcohol, proof spirit and water respectively?
3. Can the indicatious of the hydrometer in testing spirits be affected by the addition of any soluble matters having a greater specific gravity than water; if so, name them?
4. What circumstances might occur, either by design or accident, that would $c^{\text {ause error in result when testing spirits? }}$
5. In testing spirits how is the hydrometer used, and what other instrument is used in connection with it?
6. Having determined the indications by these instruments, how would you proceed to ascertain the strength?
7. If required to test a car-load of spirits, contained in casks varying in both size and strength, how would you proceed?
8. Will the mixture of one volume of water and one volume of spirits 50 overproof make two volumes, and what will be the strength of the mixture?
9. In testing the accuracy of a hydrometer with one known to be correct, how would you proceed?
10. In testing a sample of spirits the temperature was found to be $60^{\circ}$, hydrometer indication 34.2, and another sample, temperature $55^{\circ}$, hydrometer indication 20.8, what would be the strength of each, and the difference in proof gallons between 100 wine gallons of the former and 98 of the latter?

No. 7.
gTOOK TAKING.-GRAIN.
Time.-2 hours.

1. A rectangular bin full of malt, with the exception of the space occupied in one corner by a hopper which is empty. Dimensions of bin, opposite sides 148 in., ends 114 in ., depth 8 ft .6 in . ; the hopper is at the top 45 in . by 40 in ., and at the bottom 10 by 3 in., and of the same depth as the bin, two of its adjacent sides being formed by the side and end of the bin, and the other two sloping from the top to the bottom, as indicated by the dimensions above given. A measure of 1,000 cubic inches is found to weigh 161b. How many centals of malt are there in the bin-to two places of decimals?
2. The stock of Indian corn is found thrown up against the end wall of a granary 27 feet 6 inches in width. It extends along the side walls at the base 20 feet, within which dimensions it is confined by boards running across the granary parallel to the and wall to the height of 4 feet. From the top of these boards the grain slopes ovenly up to the height of 10 feet against the end wall. A measured sample of 1,000 cubic inches weighs 28ibs. What is the aggregate quantity?
3. In addition to a bin containing 137.37 centals, there is a further lot of rye thrown up the corner of the granary as follows: At the base it extends 30 feet along either wall and is confined by boards to the bight of 4 feet, from the top of which it slopes evenly back to the top of the pile whice is levelled off at 148 inches from the loor. At the top it extends six feet along either wall. A sample weighs 261bs., to the 1,000 cubic inches. How many centals of rye are there in all?
4. A bin containing oats weighing : 16 tibs. to the 1,000 cubic inches is of the following dimensions:-10 feet long, 8 feet 4 inches wide, and 85 inches in depth. State the aggregate quantity in bin?
5. There were found piled up in a corner of the granary 19 barrels, each having a capacity of 50 Imperial gallons which had been temporarily filled with wheat. A eample weighed 28 tbs. to the 1,000 cubic inches. State the aggregate quantity?

> 6. In addition to the above, a quantity of mill offal was found to weigh 8,347 tbs., which, with the above, completed the entire stock of grain.

[^5]
## spirits.

> Time.-3 Hours.
In taking stock of the spirits in the !distillery, the following gauges were taken, from which to compute the quantities at leisure. The rectifiers having been shut off at bottom at the 1 ime of stock taking :

1. Five rectifiers, each containing sprits at 30 under-proof.-
Bottom diameter............................................. 60 inches.
Top " .......................................... 65 "
Depth........................................ .................. 100 "
Space between false and real bottom.................. 2 "
Thickness of false bottom................................. 2 "
Depth of coal................................................ 80 "
Wet dip over coal.......................................... 6 "
2. Five rectifiers containing spirits at proof in process of rectification :-
Bottom diameter............................................. 110 inches.
Top " ............................................. 100 "
Depth.......................................................... . 100 «
Otherwise the same gauges as the above.
3. Receiver No. 1 contains spirits 65 over-proof,-
Bottom? diameter
140 inches.
Top " ........................................ 130 "
Depth..................................................... 100 "
Wet: dip................................................... 75 "
In this Receiver was discovered an encumbrance in the form of a scantling $3 \times 3 \frac{1}{3}$ inches, resting on the bottom of the vessel and supporting the top.
4. Receiver No. 2 containing spirits at 50 under-proof,-
Bottom diameter....................................... 135 inches.
Top " ........................................ 128 "
Depth ......... ....................... ....... ............ 110 "
Wet dip............................... .. . ............. 93 "
5. Receiver No. 3 containing spirits at 8 under-proof,-
Bottom diameter...................................... 160 inches.
Top " ........................................ 150 "
Depth..................................................... 120 "
Wet dip.................................................. 112 "
6. The Mixing Tub containing'spirits at 30 under-proof,-
Bottom diameter........................................ 160 inches.
Top ، ........................................ 157 "
Depth..................... ............................... 50
Wet dip................................................... 42 "
7. The Still Charger contained spirits at 30 under-proof,-
Bottom diameter. ..... 165 inches.
Top " ..... 155
Depth ..... 144 "
Wet dip ..... 140 "
8. The Low Wines Tub contained at 20 under-proof,-
Bottom diameter ..... 70 inches.
Top ..... 60 "
Depth ..... 75 "
Wet dip. ..... 60 "
9. In addition to the spirits in bond, namely 838 pkgs., aggregating 44,164.74 proof gallons, the following were found, duty paid, on distillery premises, viz :100 barrels, 50 gallons each, at. $\qquad$ 50 over-proof. 20 " 50 " "............. 30 under-proof.
Norz.-The aggregate quantity of spirits, as ascertained by the above computations, will be required to close the paper on Stock Book No. 2. The candidate will therefore take a note of it before siving in this paper.

No. 8.

DISTILLER'S 8TOCK BOOKS.

## Time-4 Hours.

Messrs. W. Thompson \& Co., of London, commenced operation as distillers upon the
first day of August, 1874, with the following stock of grain and spirits :-
On the 16th of the same month operations were stayed, and stock was taken, the result of such stock taken being that recorded in the preceding paper.

The candidate is required, from the information afforded by this paper, to write up the Stock Book Nos. 1 and 2, and make out S. M. Return and Form G. No. 7.

Stock on Hand 1st August, 1874.

| Grain. | Centals. |
| :---: | :---: |
| Malt, domestic.. | $301 \cdot 76$ |
| Indian corn, foreign. | 1,773•14 |
| Rye, domestic. | 1,238•12 |
| Oats and other grain | 169.80 |
| Wheat. | 76.08 |
| Mill offal | 64.78 |
| Total.. | 3,623•68 |



Aug. 15. Purchased from Walker \& Sons, Windsor, 344 packages, containing 18,119 wine gallons of whiskey, 25 under-proof. 13,589•25 gals.

Grain Mashed or otherwise accounted for.


Used for feed in stables, 966 lbs . oats, taken out of stock.
Spirits removed from premises.
Aug. 5. Shipped 100 brls. duty paid spirit-, 5,130 W. G., 25 under-proof, to G. Barber Strafford, per G. T. R. marked $3: \frac{14}{1 i}$. © 100 .

Aug. 6. Shipped 100 barrels spirits in bond, 5,119 wine gallons, 50 over-proof, to W. M. Lotbridge, Hamilton, per G. T. R., marked O. N. B. 15, 1 (a) 100.
Aug. 10. Shipped 100 brls. duty paid spirits, 5,145 wine gallons, 25 under-proof to James Cowan, Toronto, per G. T. R., marked 3.73 1 @ 100.
Ang. 15. Shipped to Ramsay \& Co., Toronto, per G. T. R., in Bond, marked :-
$\left.\begin{array}{c}\text { O. N. B. 18. } \\ 3 \cdot 74 .\end{array}\right\}$ Nos. $253 @ 348,96$ barrels spirits, 25 nnder-proof. 4,932 wine gall. do. $\}$ " 349 @ 352, 4 " " 50 over-proaf. 209 "
Aug. 15. Shipped J. Williams, St. John, N. B.., per G. T. R., in Bond, marked :$\left.\begin{array}{c}\text { O. N. B. } \\ 3.74 .\end{array}\right\}$ No. 51 @ 100,50 barrels spirits, 50 over-proof. 2,588 wine galls.
Memorandum of details shown in Lock Label Book during the first half of August, 1874.
Date
Au

| Date of Test. | Beer. | Grain. | W. G. in C. R. | Strength. | Proof Galls. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ang. 3 | 49,580 | 90,150 | 4,034 | 35.3 o. p. | 5,458.00 |
| " 5 | 50,864 | 90,000 | 4,034 | $35 \cdot 9$ " | 5,482.20 |
| 7 | 50,882 | 90,000 | 4,120 | $34 \cdot 4$ " | 5,537.28 |
| " 8 | 47,834 | 90,000 | 3,826 | 36.1 " | 5,207•18 |
| 10 | 35,070 | 60,000 | 2,604 | 36.6 " | 3,557.06 |
| " 11 | 34,720 | 60,000 | 2,840 | 39.5 " | 3,961.80 |
| " 12 | 17,744 | 30,000 | 1,508 | 34.3 " | 2,025.24 |
| " 14 | 34,996 | 60,000 | 2,630 | 36.6 " | 3,593.58 |
| " 15 | 15,840 | 30,000 | 1,380 | 35.5 " | 1,869.90 |
|  |  |  |  |  | 36,621 24 |



No. 9.
stock books.--TOBACCO.

$$
\text { Time. }-5 \text { hours. }
$$

[^6]Messrs. Ollendorf \& Co., Montreal, re-commenced business on the 1st day of July, after having taken stock. Their stock on hand having been ascertained to be as follows:-

Raw Leaf Tobacco. Lbs.
1,050 packages Foreign Tobacco.......................................... 900,000
18 " Canadian " ......................................... 35,724
Liquorice................................................................ ...... 71,070
Sugar............................................................................ 57,234
Gum ............................... ............................................... 300
Tobacco in process of manufacture, having undergone the pro$\left.\begin{array}{l}\text { cess of casing, \&c., and including stems taken therefrom } \\ 45,000 \text { lbs................................................................. }\end{array}\right\} 265,000$

Manufactured Tobacco, 759 pkgs., 24,149 lbs., all in Bond.
Purchased during three months, as under,-
Customs Entry. lbs.

| July 3, |  | 18 hhds . | Raw Leaf. | 12,369 | 27,000 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| " 10, |  | 25 | " | 12,234 | 36,500 |
| " 15, |  | 30 | " | 15,016 | 50,120 |
| " 23, |  | 27 | " | 16,115 | 40,237 |
| " 30, |  | 15 | " | 16,475 | 19,652 |
| Aug. 7, | New York arriv | 24 | " | 17,120 | 35,000 |
| $\text { " } 18 \text {, }$ |  | 25 | " | 17,890 | 37,006 |
| " 25, | ing at the dates set opposite. | 16 | " | 18,321 | 20,100 |
| Sept. 15, | set opposite. | 22 | " | 18,962 | 33,060 |
| " 25, |  | 30 | " | 19,140 | 51,231 |
| " 26, |  | 15 | " | 19,400 | 19,752 |
| " 28, |  | 27 | " | 19,652 | 42,100 |
| 30, |  | 30 | " | 19,750 | 82,714 |

July 17. From Walker \& Co., Montreal, 100 cases liquorice, 164,748 lbs.
" 25. 100 hhds. sugar, 201,608 lbs.
Aug. 10. 500 lbs. gum.
Sept. 17. 30 hhds. sugar, $75,012 \mathrm{lbs}$.
The following quantities of raw material had been taken into use in the mana facture of Tobacco :-

|  |  | Foreign R Pkgs. | Tobacc <br> Lbs. | Liquorice. <br> Lbs. | Sugar. <br> Lbs. | Gum. Lbs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| July | 3 , | 20 | 25,500 | 7,325 | 2,000 |  |
| " | 5, | 26 | 33,168 | 7,416 | 2,000 | 100 |
| " | 8, | 23 | 29,325 | 7,106 | 2,000 |  |
| " | 10, | 24 | 30,600 | 8,000 | 2,000 |  |
| " | 12, | 22 | 28,050 | 8,124 | 2,000 |  |
| " | 14, | 21 | 26,325 | 7,116 | 3,000 |  |
| " | 16, | 25 | 31,425 | 8,000 | 1,000 | 50 |
| " | 21, | 23 | 29,325 | 8,000 | 2,000 |  |
| " | 23, | 24 | 30,600 | 7,500 | 3,000 |  |


| July" | 28,31, | Foreign Raw Leaf Tobacco. |  | Liquorice. Lbs. | Sugar. <br> Lbs. | Gum. Lbs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Pgks. | Lbs. |  |  |  |
|  |  | 22 | 28,050 | 8,000 | 3,000 | 50 |
|  |  | 23 | 29,325 | 8,000 | 2,000 |  |
| August 7, |  | 25 | 31,425 | 8,000 | 2,000 | 100 |
| " | 10, | 21 | 26,300 | 7,500 | 1,000 |  |
| " | 15, | 20 | 25,048 | 8,400 | 2,000 |  |
| " | 17, | 26 | 33,156 | 9,000 | 1,500 |  |
| " | 19, | 23 | 29,298 | 1,200 | 3,500 | 50 |
| " | 23, | 24 | 30,584 | 10,500 | 2,000 |  |
| " | 27, | 25 | 31,462 | 9,650 | 2,000 |  |
| " | 31, | 23 | 29,301 | 9,000 | 1,500 |  |
| Sept. | 4, | 24 | 31,204 | 7,000 | 2,000 |  |
| " * | 8, | 22 | 27,916 | 10,070 | 1,500 |  |
| " | 12, | 23 | 29,198 | 9,540 | 3,000 |  |
| " | 15, | 25 | 31,507 | 7,615 | 3,000 |  |
| " | 18, | 26 | 33,148 | 8,150 | 2,000 | 50 |
| " | 22, | 21 | 25,970 | 2,164 | 1,500 |  |
| ، | 26, | 25 | 31,287 | 9,250 | 1,000 |  |
| " | 28, | 22 | 23,114 | 9,000 | 1,000 |  |
| ${ }^{6}$ | 30, | 20 | 35,759 | 8,374 | 1,020 |  |

The manufactured tobacco produced was as follows:-


Pkgs. Lbs.

| Aug. 1 | 17, | 400 | 17,600 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| * 2 | 20, | 580 | 25,520 |  |  |  |  |  |
| * 2 | 24, | 800 | 34,900 |  | Enter | or Ent'd | Oon | tion. |
| " 2 | 27, | 600 | 26,400 |  | Warel |  |  |  |
| " 3 | 31, | 590 | 27,400 | Aug. 31, | 2,910 | 125,800 | 60 | 6,020 |
| Sept. | 2, | 440 | 19,360 |  |  |  |  |  |
| * | 6, | 660 | 29,040 |  |  |  |  |  |
| 4 | 7 \% | 435 | 19,140 |  |  |  |  |  |
| " 1 | 10, | 650 | 27,320 |  |  |  |  |  |
| " 1 | 12, | 440 | 12,320 |  |  |  |  |  |
| * 18, | 15, | 639 | 26,485 | Sept. 15, | 3,200 | 134,480 | 64 | 6,185 |
| * 18 | 18, | 624 | 27,456 |  |  |  |  |  |
| * 2 | 21, | 600 | 26,400 |  |  |  |  |  |
| " 2 | 24, | 500 | 22,400 |  |  |  |  |  |
| " 2 | 26, | 439 | 19,316 |  |  |  |  |  |
| * 2 | 28, | 475 ${ }^{1}$ | 20,900 |  |  |  |  |  |
| * 3 | 30, | 489 | 19,963- | " 30, | 3,060 | 131,105 | 67 | 5,330 |

Manufactured tobacco disposed of as follows:-
July. 2. Sold John Smith, London:-
125 pkgs. Tobacco, 4,375 lbs., duty paid.
« 6. Sold James Thompson, Guelph :-
260 pkgs . Tobacco, 12,090 lbs., for removal in bond.
« 6. Sold Sam. Merritt, 200 pkgs. Tobacco, 8,500 lbs., for export.
" 8. Sold John Brown, Montreal :20 pkgs. Tobacco, 2,100 lbs., transferred.
© 10. Sold Peter Robertson, Kingston :500 pkgs. Tobacco, 23,250 lbs., for removal in bond. 1,250 do 53,125 " for export.
" 10. Stems destroyed by Order of Department, 32,560 lbs.

* 10. Sold Samuel Millar, Perth :-

300 pkgs. Tobacco, $10,500 \mathrm{lbs}$. duty paid.
" 16. Paid duty Ex-Warehouse, and taken into stock :1,650 pkgs. Tobacco, 46,890 lbs.
c 18. Sold Wm, Daniels, Prescott :-
$1,000 \mathrm{pkgs}$. Tobaceo, 46,599 lbs., for removal in bond."
c 22. Sold Joshua Wilson, Montreal :--
10 pkgs. Tobacco, 1,074 lbs.. transferred.

Jaly 25. Sold Donald McDonald, Cornwall :-
500 pkgs. Tobacco, 17,764 lbs., duty paid.
" 28. Stems destroyed by Order of Department, 27,365 lbs.
" 31. Sold John Thomas, Montreal :3 pkgs. Tobacco, 318 lbs., transferred.
Aug. 3. Sold Edward Grant, Montreal:-
100 pkgs . Tobacco, 4,310 lbs., for export.
1,500 do 70,004 " for removal in bond.
"
"
"
5. Sold Jno. Howell, Montreal :-
450 pkga. Tobacco, 15,380 lbs., duty paid.
7. Sold Elias Merrill, Ogdensburg:-

500 pkgs . Tobacco, $21,278 \mathrm{lbs}$., for export.
7. Sold John Cunningham, Quebec :-

100 pkgs . Tobacco, 3,520 lbs., duty paid. 2,000 do 93,225 " for removal in bond.
10. Sold James McLean, Halifax :-

500 pkgs . Tobacco, $21,316 \mathrm{lbs}$., for export.
150 do 5,310 " duty paid.
750 do 34,789 " for removal in bond.
15. Sold Samuẹl Stevens, St. John, N. B.:-
$1,250 \mathrm{pkgs}$. Tobacco, $58,175 \mathrm{lbs}$., for removal in bond. 253 do 10,645 " for export.
15. Stems destroyed by order of Department, 34,756 lbs.
18. Sold Chas. Evans, Montreal :-

4 pkgs . Tobacco, 422 lbs ., transferred.
103 do 3,606 " duty paid.
20. Sold Jas. Howland, Toronto:-

500 pkgs . Tobacco, 23,301 lbs., for removal in bond.
100 do 3,537 " duty paid.
21. Sold Wm. Fulton, Toronto :-
200 pkgs . Tobacco, 8,537 lbs., for export.
24. Sold Jno. Hunter \& Co., Montreal :-

25 pkgs. Tobacco, 11,667 lbs., removal in bond.
50 do 1,780 " duty paid.

## 27. Sold H. Bates \& Co., Montreal :- <br> 5 pkgs. Tobacco, 496 lbs., transferred. <br> 250 do 10,670 lbs., for export.

Aug. 31. Sold Wm. Gunn \& Co., St. Hyacinthe :-
50 pkgs. Tobacco, 1,774 lbs., duty paid.
Sept. 2. Sold John Brown, Prescott:25 pkgs. Tobacco, 890 lbs., duty paid.
" 2. Stems destroyed by order of Department, $29,578 \mathrm{lbs}$.
5. Sold John Connolly \& Co., Quebec :560 pkgs. Tobacco, $26,040 \mathrm{lbs}$., removal in bond.
7. Sold A. Laurie \& Co., Halifax :-

214 pkgs. Tobacco, $9,025 \mathrm{lbs}$., for export.
" 15. Stems destroyed by order of Department, 22,635 Ibs.
" 18. Sold Jno. Fraser, Kingston :-
170 pkgs. Tobacco, 5,950 lbs., duty paid.
" 30. Sold Smith \& Brown, Halifax :-
500 pkgs . Tobacco, $21,381 \mathrm{lbs}$., removal in bond.
" 30. Stems destroyed by order of Department, 29,652 lbs.

## APPENDIX 夋.

## EXAMINATION FOR EXCISE.

conditions.
$\qquad$
1st. Candidates are not allowed to use any books or manuscript for reference.
2nd. They must not leave the room until the questions placed in their handshave been disposed of.

3rd. The number of hours to be devoted to each subject will be specified upon the examination papers, and upon the expiration of the time so allotted, the papers with such answers as the candidates can give must be given in. They should, therefore, refrain from occupying time upon questions with which they know themselves to be unacquainted.

4th. When questions require arithmetical computation, the work must be given in full.

5th. The answers must be given on separate sheets. The subject and number of question is in every case to be profixed.

6th. The first sheet of questions is to be signed in full by the candidate; to all other sheets his initials will suffice.

7th. Each candidate will be assigned a Number on entering upon the examination, and he must see that this Number is attached to sheet as handed in.

| Suphats. | Number of Questions. | Time allowed. Hours. | Marks attainable. |
| :---: | :---: | :---: | :---: |
| No. 1. Book-keeping by Double Entry. |  | 23 | 225 |
| 2. Inland Revenue Laws and Regulations.. | 19 | $1 \frac{1}{2}$ | 150 |
| 3. Arithmetic .................................. | 14 | $1 \frac{1}{2}$ | 200 |
| 4. Mensuration. | 9 | 2 | 175 |
| 5. Use of Slide Rule.......................... | 8 | 1 | 95 |
| 6. Malt Gauging. | 8 | 2 | 100 |
| 7. Computation of Commodities in Bulk.. |  | 2 | 175 |
| 8. Hydrometer and Specific Gravities...... | 7 | 1 | 100 |
| 9. Distillation | 8 | 1 | 70 |
| 10. Malting..................................... | 8 | 1 | 70 |
| 11. Tobacco | 8 | 1 | 70 |
| 12. Manufacture of Petroleum............... |  | 1 | 70 |
| Total $\qquad$ lix | ................. | $\qquad$ | . 1500 |

# No. 1. <br> INLAND REVENUE BOARD OF EXAMLNERS. 

BOOKNKEEPING BY DOUBLE ENTRY.
Time-2 Hours.
(Maximum number of marks attainable, 200.)I, John Adams, commenced business on the 1st January, 1875, with assets andliabilities, as follows :-
Goods on hand. ..... 5,25000
Due me by John Savage. ..... 25000
" Wm. Johnson. ..... 1,50000
" Alexander Waters \& Co. ..... 37500
2,12500
I hold bills receivable as under :-
J. Johnson's due 13th January ..... 50000
Wm. Bell " 1st March ..... 80000
I owe J. Robinson ..... 001,30000
" Wm. Meredith
" A. Rafferty ..... 20000
3,400 00
I have cash in hand ..... 1,200 00
" " Bank of Montreal ..... 1,50000
" bills payable outstanding to J. Williams, due 10thJanuary1,97500
" bills payable outstanding to J. Armstrong, due28th February2,00000
January 2. Bought of A. Rafferty, goods. ..... 35000
" 2. Accepted J. Robinson's draft at two months. ..... 2,000 00
" 4. Sold Wm. Johnson goods ..... 35250
" 4. Sold J. Waters \& Co., goods ..... 2,200 00
" 5. Wm. Johnson paid into my account with Bank of Montreal ..... 1,00000
" 5. Sold J. Jacobs, goods ..... 52000
January 6. Bought of J. Smith at auction, goods for cashinroiced.......... ................................. 3,250 00Which I paid for thus:-Cheque on Montreal Bank. 2,087 50
Cash. ..... $1,000 \quad 50$
Discount 5 per cert. ..... 16250
" 7. Paid for new office furniture ..... 7300

- 7. Sold Walker \& Sons goods. ..... 67500
$\therefore \quad$ 7. Sold A. Wallace \& Sons gopds. ..... 2,35000" 8. Bought from Anderson \& Co., goods (a) 3months5,050 75
" 9. Gave my note on account of the abore. ..... 5,00000
" 10. Paid my note in favor of Williams, by cheque on bank. ..... 1,97500
-. 11. Sold goode for cash ..... 3,02560
c. 12. Paid rent of store by cheque ..... 20000
Paid clerk's salary. ..... 5000
" 13. Paid into Bank of Montreal ..... $2,500 \quad 00$
" 14. Paid into Bank of Montreal, W. Johnson'snote, due today, to be placed to my credit. 50000

15. Gave my cheque to retire W. Johnson's note protested for non-payment. ..... 50125
Sold goods for cash ..... 1,21500
Stock on hand at this date valued at. ..... 3,915 65
The candidate is required to :
1st. Journalize the above transaction.
2nd. Post from journal to ledger accounts.
3rd. Balance and closed ledger, showing trial balance.
4th. And answor the following questions:
A. How much has been lost or gained?
B. What was the net capital at commencement?
C. What at the close, and of what items did it consist ?
D. Is the trader solvent or insolvent on the 15th January, and by how much?

Add the foliowing columns of firures horizontally and vertically.

Time 45 minutes.
(Maximum number of marks attainable, 25.)

| 30,247 | 50 | 35,876 | 34 | 5,476 | 32 | 42,357 | 89 | 32,654 | 73 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9,501 | 62 | 14,732 | 68 | 53,809 | 76 | -20,245 | 94 | 18,765 | 43 |  |
| 879 | 76 | 42,265 | 42 | 8,663 | 12 | 24,789 | 93 | 83,767 | 45 |  |
| 89,117 | 45 | 18,762 | 64 | 26,787 | 24 | 12,763 | 84 | 12,789 | 73 |  |
| 2:327 | 61 | 1,378 | 14 | 8,916 | 38 | 165,432 | 97 | 29,476 | 39 |  |
| 6,984 | 75 | 95,763 | 25 | 28,547 | 38 | 67,834 | c9 | 17,865 | 91 |  |
| 18,960 | 37 | 78,248 | 27 | 79,843 | 27 | 47,365 | 82 | 40,764 | 93 |  |
| 762 | 43 | 83,246 | 591 | 84,253 | 95 | 58,432 | 98 | 31,546 | 29 | . |
| 8,543 | 21 | 37,854 | 67 | 4,993 | 89 | 17,185 | 47 | 81,994 | 87 |  |
| 31,419 | 78 | 14,389 | 74 | 56,742 | 38 | 83,297 | 54 | 92,149 | r6 |  |
| 5,434 | 62 | 57,643 | 21 | 98,491 | 76 | 75,754 |  | 79,438 | 43 |  |
| 87 | 32 | 84,237 | 89 | 37,594 | 73 | 65,143 | 87 | 41,519 | 18 |  |
| 4,753 | 46 | 52,789 | 42 | 12,334 | 85 | 12,765 | 74 | 25,273 | 27 |  |
| 907 | 54 | 16,534 | 74 | 24,765 | 41 | 83,874 | 76 | 81,785 | 83 |  |
| 3,185 | 37 | 37,638 | 11 | 56,743 | 29 | 50,46:5 | 83 | 79,774 | 24 |  |
| 8,973 | 24 | 25,782 | 64 | 12,850 | 63 | 12,587 | 47 | 68,515 | 15 |  |
| 11,376 | 38 | 3,127 | 48 | 2,197 | 54 | 36,428 | 92 | 41,351 | 97 |  |
| 25,784 | 26 | 7,218 | 35 | 18,51 | 78 | - 24,936 | 78 | 33,784 | 83 |  |
| 3,127 | 84 | 13,486 | 97 | 24,316 | 19 | 93,763 | 43 | 25,976 | 19 |  |
| 2,178 | 53 | 74,003 | 26 | 89,763 | 15 | 39,487 | 65 | 19,493 | 25 |  |
| 3,486 | 97 | 62,111 | 40 | 43,285 | 19 | 34,567 | 89 | 81,876 | 18 |  |
| 15,473 | 82 | 63,190 | 27 | 12,284 | 73 | 43,658 |  | 19,834 | 81 |  |

## No. 2.

# inland revenue laws and hegulations. 

Time-1 $\frac{1}{2}$ Hour.
(Maximum number of marks attainable 150.)

1. Define the meanings raspectively of the terms "Spirit Receiver" and "Rectifier ?"
z. Define a "Distillery" as interpreted by law?
2. Define the meaning of "Raw Tobacco?"
3. What is meant by and included in the term "Bonded Manufacturer ?"
4. What are the conditions upon which it is lawful for a person to have in his possession the apparatus necessary for carrying on the business of a distidler or tobacco manufacturer without having a license?
5. To whom is application for a license to be made, and by whom issued; and bow would the license bo affected if the bond given by the manufacturer be voided by death, insolvency, or permanent removal from the Dominion of one of the sureties thereto?
6. Is any part of the duties upon articies used in bonded manufactures pryable before completion of manufacture ; if so, state conditions?
7. On receiving 'license, is a manufacturer thenceforward free to commence operations without any further action?
8. How may the duty on spirits be charged or computed?
9. How are several malt gauges to be taken and stated?
10. Of what form is a malt cistern to be made?
11. Within what hours are the initial and final operations of a maltster confined?
12. How should the several malt gauges compare with each other; and what percentage of discrepancy as between the result of the dificrent gauges is permissible?
13. Give an outline of the provisions of the law as to empty packages bearing Excise marks?
14. What is a compounder, and to what restrictions is he liable under the Inland Revenue Act?
15. What information should the stock books and daily record of a tobacco manufacturer contain respectively?
16. Give an outline of the regulations as to exporting excisable goods in bond?
17. On what conditions may tobacco be removed from the premises on which it is grown, and how are bonds taken for tobaceo warehonsed to be conditioned?
18. What is the nature of the specification required by law to accompany the application for a bonded manufacturer's license? 4-D $\frac{1}{2}$
lxiii

No. 3.
arithmetic.
Time. $-1 \frac{1}{2}$ hours.
(Maximum number of marks attainable 200.)

1. Add together $7 \frac{5}{12}, \frac{8}{15}, 206 \frac{3}{7}$ and $\frac{54}{60}$.
2. Subtract $\frac{1}{2} \frac{20}{3}$ from $6 \frac{7}{3}$.
3. Multiply $16 \frac{4}{3}$ by $3 \frac{6}{13}$.
4. Divide $3 \frac{2}{5}$ by $7_{\frac{8}{11}}$.
5. Add togrether 6u.031, 9.0009 and 856.39107 .
6. Subtract 31.928734 from 50.17328 .
7. Nultiply 30,24 by .0334 .
8. .Divide 293.46 by .438 .
9. Express $\frac{1}{8} \times \frac{3}{32}$ of gallon in Decimals.
10. If 277.274 cub. inches equal one Imperial gallon. and 2218.192 cub. in. an Imperial bushel, how would you express the decimal proportion which 1 in . bears respectively to each.
11. Add 69 thousandths to 327 ten thousandths.
12. Divide $326 \pm 50$ by $15,35,45$, and 55 in the shortest way attainable.
13. If a proof gallon of spirits (upon which the duty is 90 c .) is sold, duty paid at $\$ 1.50$, how much per cent is the price enhanced by the duty?
14. What is the fourta proportional to 3.05: . $003:: 3$.

15. What is the aroa of a ifht angle tiangle, whose base and perpendicular are 12 ft . and 7 ft . respectively?
16. What would $b s$ the 1 erpendicular height of a triangle whose base was 15 ft and two sides 14 and 13 ft . respectively.
17. Given a trapezoid, one of the parallel sides of which are 50 in ., and the other 60, the perpendicular distan ev between them being 65 in., what is the area in inches?
18. How would you procoed to find the area of a tiapezium and of a polygon respectively?
19. What is the area of a circular vessel having a diameter of 130 in .
20. What is the area of an elliptic floor, the axes of which are 33 ft .5 in . and 20 ft. 3 in., respectively.
21. In this figure, the following measurements being given, find the area, to three places of decimals:

$$
\begin{aligned}
& \mathrm{A} \cdot \mathrm{~B}=6 \mathrm{ft} . \\
& \text { BC"3" } \\
& \text { CD " } 4 \text { " } \\
& \text { DE"5" } \\
& \text { AE" } 4 \text { " } \\
& \text { AC" } 7 \text { " } \\
& \text { EC" } 8 \text { " }
\end{aligned}
$$


8. Or given in a similar figure :-
$E C=10 \mathrm{ft}$.
$A C=9 \mathrm{ft}$. and perpendiculars to $A C$ from $B, A$ to $E C$ and $E C$ to $D 2 \frac{1}{2} \mathrm{ft}$. $3 \frac{1}{4} \mathrm{ft}$. and 3 feet respectively, what would be the area?
9. If the diameter of a circle be 10 in ., what is its circumference, what its area in inches, and what its capacity in imperial gallons to each 10 in . in depth?

No. 5.

## Use of Slide Rule.

Time-1 Hour.
(Maximum number of marks attainable, 75.)

1. Upon what principle is the slide rule constructed?
2. What do you understand by the terms "arithmetical" and "geometrical" progression respectively?
3. Is there any distinguishing difference between the lines $A, B$, and $C$, and Wherein do the lines $D$ and M D differ from the line $A$ ?
4. What are the significations of the letters $M D, S S$, and $S L$, and which line is more particularly suitable for use in the survey of malt houses?
5. Explain how you would proceed in order to solve the following : questions by the slide rule, and state what figures on $B$ would be opposite, 1 on $A$, and what figure on $A$ would be opposite the required answer on $B$ ?

What is the product of $27 \times 28$ ?
Divide 1170 by 9.
Find the 4th proportional to $25: 40:: 60$.
6. What is the square root of 62,500 ? Explain the process of ascertaining the answer.
7. On examining the slide rule generally in use by excise officers in Canada, the following gauge points are to be discerned :

On the Line A-

1. Against the figures 1. 128

2 " " 2.15
On the Line D-
3. At 17.15
4. At 46.37
5. At 52.32

On tne Line B-
6. Against 2.31

Explain for what purposes these are to be used, and how they are obtained.
8. How would you proceed to find the contents in Winchester bushels of a malt floor of the following dimensions : Length, 400 inches ; breadth, 250 inches ; depth, 3.5 inches.


No. 6.

MALT GAUGING.
Time-2 Hours.
(Maximum number of marks attainables, 100.)

1. Name the several gauges referred to in the Inland Revenue Law, and state which of them you consider to bo most essential in order to protect the revenue against fraud?
2. How should the first gauge compare with each subsequent one?
3. Of what capacity is the unit of measure substitued by the Inland Revenue Department in the place of the Winchester bushel, and now in use by Excise Officers?
4. In a floor of malt the following measurements are taken, viz:

The sides are 11, 12, 13 and 17 feet respectively; the first two forming a right angle. Six dips are taken as follows:-7 in., 6.2, 5.7, 5.2, 6.3, 6.1.-How many M. cubic inches do these measurements represent?
5. How would you proceed to determino the approximate weight of a large quantity of malt stored in granaries in the absence of suitable appliances for weighing it within the time at your disposal?
6. In a cistern which is perfectly cylindrical, but which has a drip of 2 inches the dry cistern gauge of a quantity of barley is as follows:-

Diameter of cistern, 110 inches; dip at highest side, 63 inches.
How many 1,000 cubic inches of barley does it contain, and what would you expect to find by the following gauges rospectively:-

Wet cistern gauge.

| Couch | do. |
| :--- | :--- |
| Floor | do. |

Kiln do.
7. What would be the percentage of loss in weight as between $10,000 \mathrm{lbs}$. of barley and its product in malt, the barley weighing 22 lbs to the 1,000 cubic inches, and the malt 16.5 lbs ?
8. What would be the contents of a vessel in the form if to frustum of a cone of the following dimension:

Top diameter, 65 inches.
Bottom do 74 "
Depth 100 "
And assuming this to be filled with barley weighing 20 lbs . to the 1,000 cubic inches, what would be the weight of malt to be expected therefiom?

## No. 7.

## computation of commodities in bule.

Time.-2 Hours.
(Maximum number of marks attainable, 175.)

1. Give the approximate weight per MCI (1000 cubic inches) of the following Srains, viz: Wheat, barley, malt, Indian corn, rye and oats.
2. How many centals of barley would be contained in a bin 20 ft . long, 12 ft . Wide, and 5 ft .3 in . deep, a measured sample of 1,000 cubic inches weighing 23 lbs .
3. How many centals of malt, weighing 16 lbs . to the 1,000 cubic inches could be contained in 28 puncheons, each having a capacity of 118 Imperial gallons?
4. In a granary 25 foat wide a lot of grain is thrown up against the end wall, extending along the side wails 15 feot, within which it is confined by upright boards
to the height of 2 feet; from ths top of these bcards it is evenly sloped up to the height lvii
of 10.2 feet against the end wall. A sample weighs 26 lbs . to the 1,000 cubic inches. How many centals are there in the heap?
5. A vessel in the form of frustum of a cone measures as follows:

what would be its capacity in cubic inches, if filled to within ten inches of the top, and how many proof gallons would this represent if the spirits contained therein were 30 under proof?
6. If the vessel mentioned in the next preceding question was horizontally divided into ten equal sections of ten inches each in depth, what would be the number of proof gallons contained in the third section from the bottom, the spirits being 50 over-proof?
7. A quantity of corn is thrown up in the corner of a granary as follows: At the base it extends 30 feet along either wall, and is confined by boards to the height of 4 feet, from which point it slopes evenly back to the top of the pile, which is levelled off at 148 inches from the floor. At the top it extends six feet along either wall. A sample weighs 26 lbs. to the 1,000 cubic inches. How many centals does the hoap contain?

## No. S.

## HYDROMETER AND SPECIFIC GRAVITIES.

Time-1 Hour.
(Maximum number of marks attainable, 100.)

1. What are the weights per Imperial gallon of absolute alcohol, proof-spirit and water respectively?
2. Explain the principle upon which Syke's bydrometer is constructed?
3. Can the indications of the instrument referred to be affected by adding to the spirits under test any soluble matter having a greater specific gravity than water if so, name the articles?
4. If the spirits to be tested were by natural or artificial means reduced to as abnormally low temperature, would the spirits contract in volume? Would the strength by Syke's tables show a corresponding increase ; and would anyjchange take place in the weight of the volume?
5. Will the mixture of one gallon of water and one gallon of spirits at 50 over proof make two gallons, and what will be the strength of the mixture?
lxviii
6. Explain how the hydrometer is used, and what precautions it is necessary to take in order to ensure a correct test?
7. In testing a sample of spirits, the temperaturo was found to be 62 degrees, hydrometer indication 35, and another sample tempreature 52, hydrometer indication 32, what would be the strength of each, and the difference in proof gallons between 100 Imperial gallons of the former and 95 wine gallons of the latter?

$$
\text { No. } 9 .
$$

## DISTILLATION.

## Time-1 Hour.

(Maximum number of marks attainable, 70.)

1. What are the several operations necessary to the distillation of spirits from grain? In what order do they transpire, and what length of time is requisite for each?
2. What is the object of fermentation, and what are the different changes, as to the taste of the wash as the process goes on?
3. What is meant by "Attenuation of Wash or Beer?
4. What further process is requisite in order to render spirits marketable aftor they have been charged for duty, and at what point is that charge established.
5. What is the usual method of testing for duty? and what precautions should be taken by the officer prior to and during the operation of testing, in order to ensure a correct result?
6. What result might be expected if the process of fermentation were und ul prolonged?
7. Describe the process and state the object of taking a "Special Test ?"
8. What are the principal duties of an Officer of Excise in charge of a distillery, especially with a view to the prevention of fraud?

## 40 Victoria

No. 10.<br>malting.<br>Time-1 Hour.<br>( Maximum number of marks attainable, 70.)

1. Describe the sereral processes undergone by grain in order to the production -of malt.
2. What chemical effect has the process of malting on the constituent parts of the grain?
3. What three agents are essential to germination?
4. How would you arrive at an opinion as to the date at which a given floor of malt had been steeped.
5. What would be the consequences respectively of allowing the germination of grain to proceed too rapidly or too long?
6. What length of time does each operation in the process of malting usually require?
7. What is the practice of the Inland Revenue Department as to the gauging of malt?

Is it done by weight or measure?
What is the established unit of measurement, and at what point is the one gauge surrendered for another?
8. How should the measurement of the grain prior to the first operation of steeping correspond with the subsequent ones-and what extent of divergence from the legally established proportions is to be considered indicative of fraud-and what special action is called for in case of such divergence?

No. 11.

> товассо.

Time-1 Hour.
(Maximum number of marks attainable, 70.)

1. Give an outline of the process of cigar making?
2. Upon what book, kept in obedience to Exciso regulations, must raw leaf tobacco imported for manufacturing purposes bo entered?
lxx
3. State what the debit and credit sides respectively of each of the three books instituted by the Inland Revenue Department and kept by tobacco manufacturers should show?
4. If stems are removed from one factory to another, where should they be recorded in each case as "removed" and "received."
5. What is in your opinion the percentage of waste in raw leaf incurred in the process of manufacturing into cavendish-to what cause is the waste mainly due, and $t_{0}$ what extent is the waste of leaf made up by other ingredients?
6. What do you consider to be the main causes of difflculty as regards the keeping of an absolutely reliable check upon the proceedings of a manufacturer of tobacco?
7. Describe the process of "casing" tobacco, and name the ingredients used ?
8. Before taking stock, what facts (as recorded in the stock books of a manufacturer) is it necessary to ascertain in order to arrivo at a rational conclusion as to Whether or not fraud has been practised?

$$
\text { No. } 12 .
$$

MANUFACTURE OF PETROLUM.
Time-1 hour.
(Maximum number of marks attainable, 70.)

1. What do you understand by the term "Distillate?"
2. Is any further process necessary to render petroleum "Distillate" fit for purposes of illumination?
3. At what point of its manufacture is petroleum first chargeable with duty?

Petro What processes are necessary for the production of distillate from crude leum?
5. What do you estimate the percentage of waste necessarily incurred in con${ }^{V}$ orting petroleum, after the first process of distillation is finished, into refined petroleum, capable of bearing the fire test?
6. What is the fire test? Describe the means employed in ascertaining the character of petroleum in relation thereto.
7. Are all of the products of crudo petroleum sulject to Excise duties?
8. Give in outline the Departmental Regulations issued to Officers of Excise in relation to the supervision of petroleum refineries, especially as to-

1. Gauging the "Outage" of settling tanks.
2. Obtaining sample for test.
3. Recording results of test.
4. Testing correctness of gross and tare weights.
5. Proportion of packages to be marked with Inspector's brand before draw ing off contents of tanl.
6. Fractional parts.
7. Retesting oil on remoral to other Divisions.

## APPENDIX

Analysis of Excise Examinations held during the Fiscal Years 1874-75 and 1875-76.




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|  |  |  |  |
| :---: | :---: | :---: | :---: |


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Candidates entitled to ist class certificates．


from 1st July，1874，to 30 th June， 1876.



## lxxv

APPENDIX K.-(Continued.)


## APPENDIX TV.


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## APPENDIX 染.

Statement showing Names and Standing of the Officers of the Inland Revenue Department, arranged by order of merit as evidenced by the marks attained at Excise Examinations.


## APPENDIX 解.-(Continued.)

| Names. | Present position. | Number of Marks. |
| :---: | :---: | :---: |
| First Class. |  |  |
| Stewart, John | Evciseman... | 1,005 |
|  |  |  |
| Milwood, G. V.. | do ................................... | 990 |
| Cramed, Angus. | Deputy Collector ........................... | 986 |
| Crawford, W.P | Exciseman..................... ...... .... .... | 981 |
| Camareos, T. M. |  | 980 977 |
| Graham, W. ${ }^{\text {J }}$ | Exciseman | 977 948 |
| Ford, John | Exciseman ...... ...................................... | 945 |
|  | ${ }^{\text {Excseman }}$ | 942 |
| Cunnett, Jas......... | do | 933 |
|  |  | 933 |
| Knomour, James ............. .................. ....... Collector ........... |  | 930 |
| Kennedson, J. B. | Deputy Collector.................. | 926 |
| Barker, ${ }^{\text {C }}$ J. H. (?) | (J. D.) above.......................... 905 ${ }^{\text {a }}$ |  |
| Lemer, C........................ | Exciseman................................... | 901 |
| Rellemere, R <br> District Inspector <br> Cilemere, R................................. <br> do Bookkeeper. |  |  |
| Third Cluss. |  |  |
| Wilson, D...................... ...................... Exciseman...... ............................ |  | 895 |
|  |  | 894 |
| Schram, B.. | do ........................................ | 882 |
| Merrictone, R. | do | 881 |
| Travis, Geo. | do ............................................. | 877 |
| Patton, George | Deputy Collector .. ............. .......... | 868 |
| Dingon, W.... | Collector................... .. .. ............. | 862 |
| Rellockan, N. G | Exciseman .................................... | 858 |
| Detock, D | Collector........... .......................... | 855 |
| Fortier, H | Exeĺseman.................................... | 849 |
| Duquette ${ }^{\text {b }}$, G | Deputy Vollector .......................... | 844 |
| Patton, F | Exciseman........................ .......... | 831 |
| Broun, ${ }^{\text {a }}$.... | do . ................................ | 828 |
| O'Brien, ${ }^{\text {a }}$ M. E | do ......... ........................... | 815 |
| Brough, J. S............... | do ............................ ........ | 810 |
| Malo, T.... S .................. | do ............................................. | 810 |
|  |  | 907 |
| Dunn, Artho.................... | Deputy Collector ............... ......... | 804 |
| Daris, Arthur...... ................. .................... Exciseman.................................... |  | 803 |
| Measam, F .................... | do ..................... ...... ........ | 791 |
| Muligan, F.......................... .................. Departmental Clerk........................ |  | 784 |
|  |  | 781 |
|  |  | 778 |
| $S^{\text {Soner, }}$ C. A. B ......... . ......... ............. ....... Deputy Collector............. ............. |  | 772 |
|  |  | 771 |
|  |  | 766 |
| Gates, J. McG .................... ........ ........ ..... Exciseman................................... |  | 759 |
| Powell, B. J ................................................ ${ }^{\text {a }}$, do ...................................... |  | 749 |
| Them, B. J <br> Mcopson, J. G <br> McCord | . do .................................................................... | 740 |
|  | do $\quad$ do................................................. | 733 |
| Blanchard, B | do ..................................... | 735 |
| Mawhard, B | do .................................................... | 731 |
| Batue, M.......................... | do .................. .................... | 723 |
| Jagoe, J. F | . Collector ..... ............... ................ | 722 |
|  | .Exciseman.................................... | 721 |
| Taylar, J. J. F.............. | do ............................... ..... | 709 707 |
| -orvin, C. A | do ......................................... <br> Collector | 707 |
|  | 1xxix |  |


 as returned to the Dipartment of Inland Revenue by the respective Inspectors.

| Division. | Flour. |  |  |  |  |  |  |  |  |  |  | Fees. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Superior Extra. | Extra Superfine. | Fancy Superfine. | Spring Extra. | Superfine. | Fine. | Fine Middlings. | Pollards. | Strong Bakers'. | Sour. | Rejected. |  |
|  | Pbls. | Bbls. | выs. | Bbs. | Bbls. | Bbls. | Bbls. | Bbs. | Bbs. | Bbs. | выs. |  |
| Quebec. .................................. | 676 | 1,473 | 350 | 48,296 | 2,640 | 3,491 | 2,302 | 168 | 837 | 39 | 2,186 | $\begin{gathered} \$ \text { cts. } \\ 1,544 \quad 17 \end{gathered}$ |
| Montreal.................................. | 76,308 | 75,746 | 13,873 | 200,199 | 23,208 | 3,020 | 13,790 | 1,931 | 10,468 | 803 | 11,121 | 8,880 98 |
| Toronto............................. .......! | 1,887 | 3,390 | 1,600 | 7,265 | 3,434 |  | 422 | 5 | 1,733 | ........................ | 8 | 46192 |

wheat and uther grain.

| Dirisfon. | Wheat. |  |  |  |  |  |  |  |  |  | Corn. | Oats. |  |  | Rye. |  | Peas. |  |  |  | Barley. |  |  |  | Fees. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Winter. |  |  |  |  |  | Spring. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ${ }^{\mathrm{N} \cdot{ }_{\text {W, }} \text {. }}$, | No. ${ }_{\text {W, }}$, | $\underset{\substack{\text { No. } \\ \text { R. } \\ \text {, } \\ \text {, }}}{ }$ | $\underset{\text { No. }}{\text { R. }}$, | No. 3. | Rejected. | No. 1. | No. 2. | No. 3. | Rejected. | No. 2. | No. 1. | No. 2. | Rejected. | No. 1. | No. 2. | No. $1 .!$ | No. 2. | No. 3. | Rejected. | No. 1. | No. 2. | No. 3. | Rejected. |  |
|  | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centals. | Centala. | Centals. | Centals. | Centals. | Centals. | Centals. | Oentals. | Centals. | Centals. |  |
| Montreal.............. | 110,034 | 47,160 | 68,400 |  |  | ..... ....... | 100,506 | 16,200 | 20,400 |  | 33,600 |  | 29,920 |  |  |  |  | 2,160 |  |  | 1,152 | $\ldots . . . . .$. | 192 | $\ldots$ | $\begin{gathered} \text { \$ cts. } \\ 716 \\ \hline 16 \end{gathered}$ |
| Toronto ............. | 14,978 | 349,416 | 112,572 | 8,526 | 3,456 | 3,132 | 671,142 | 295,848 | 28,236 | 5,064 |  |  | \|.......... | 240 | 1,108 | 5,644 | 25,140 | 20,304 | 9,300 | 1,080 | 104,396 | 505,502 | 194,376 | 5,916 | 3,822 53 |

## APPENDIX N.-Continued.

Statement showing Quantities of certain Staple Articles of Canadian? Produce Inspected under Provisions of 37 Vic., c. 45, during the Fiscal Year ended 30th June, 1876, and the Fees accrued thereon, as returned to the Department of Inland Revenue by the respective Inspectors.


POT ASHES AND PEARL ASHES.

| Division. | Pot. |  |  | Pearl. |  |  | Fees. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | First Sort. | Second Sort. | Third Sort. | First Sort. | Second Sort. | Third Sort. |  |
|  | Brls. | Brls. | Brls. | Bris. | Brls. | Brls. |  |
| Montreal .......... | 13,520 | ${ }^{845}$ | 225 | 2,299 | 82 | 1 | $\begin{array}{cc} \$ & \text { cts. } \\ 13,490 & 44 \end{array}$ |

FISH.

 as retarned to the Department of Inland Revenue by the respective Inspectors.


Leather and raw hides.

| Division. | Leather. |  |  | Raw Hides. |  |  |  | Fees. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 1 | 2 | 3 | Calf Skins. |  |
| Montreal... | 161,741 | 114,718 | 8,552 | $\begin{aligned} & 19,574 \\ & 34,275 \end{aligned}$ | 10,298 | 2,8241,320 | ..................................................... | $\begin{gathered} \text { \$ cta. } \\ 7,34043 \end{gathered}$ |
| Toronto........... |  |  |  |  | 19,213 |  |  | 2,719 24 |
| Ottawa............. |  |  |  | 9,392 | 1,857 | 577 | .................... | 49111 |
| St. John, N.B............. ... | 6,499 | 20 | 11 | 6,966 | 682 | 119 | 1,653 | 59370 |

## FINANCIAL RETURNS, 1875-76.

Dè.


| $\begin{array}{\|c} \text { Balances } \\ \text { due } \\ \text { 1st July, } \\ 1875 . \end{array}$ | Amounts accrued during the year, including License Fees. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Spirits. |  |  | Tobacco. | Petrolenm Duty and Inspection Fees. | Bonded Manufactures. | Seizures | Other Receipts |
|  |  |  |  |  |  |  |  |  |
| $\begin{array}{r} 8691 \\ 7490 \\ 1,20640 \end{array}$ | 6,158 00 |  |  | 50550 |  |  |  |  |
|  | 54,467 09 | 20000 | 4,33273 | 9,794 50) |  |  | 500 | 50 |
|  | 11,354 73 | 25000 | 7,153 93 | 87850 |  |  |  |  |
| .............. | 10,913 61 | 7500 | 81884 |  |  |  |  | 200 |
| -............ 386 | 22,308 14\| | 70000 | 5,916 87 |  |  |  |  | 00 |
| 7,605 33 | 221,971 38 | 80000 | 26,750 85 | 44,553 50 |  |  |  | 15055 |
| 6,589 90\| | 49,488 <br> 64 | 400001 | 15,628 03 | 165,348 90 | 6920 | 16,920 30 |  | 1,93500 |
| 12680 | 67,983 40. | 25000 | 7,360 37- | 59,432 301. |  | 1,271 23 |  | 140480 |
| 8,901 55 | 35,93045 <br> 99,179 <br> 98 | 400000 | 32,862 73 | $61,825 \quad 20$ | 86 |  | 50000 | 8990 |
| -1........ |  | 25000 | 3,737 21 | 45,479 30, |  |  | 510 |  |
| 1,131 14 | 38,792 75 | 30000 | 4,71471 | 44,147 50 | 5) |  |  | \%980 |
| 3786 | 8,892 65 | 10000 | 1,215 82 | $2,01790 \mid$. |  |  |  |  |
|  | 18,534 23 | 15000 | 3,415 06 | 3,830 10. |  |  |  |  |
| 7,7i6 35, | $\begin{array}{r} 116,655 \\ 93 \\ 14,853 \\ 78 \end{array} .$ | 15000 | 16,555 63 | 5,266 30. |  |  |  | 1650 |
| 25 201 |  |  | 1,230 48 | 6,402 90 | 49,122 25 | 27178 |  | 15000 |
| 28258 | - 27,85428 | 32500 | 8,675 11 | 7,703 90. |  |  |  | 650 |
| 13,606 61 | $\begin{aligned} & 530,257 \\ & 687,595 \\ & 91 \end{aligned}$ | 85000 | 66,476 98 | 256,491 11 | 80531 | 5,266 34 | 59200 | 1,641 50 |
| 11,574 83 |  | 42500 | 11,520 80 | 19,397 24. |  | 59026 |  | 374 15 |
| 64,279 68 | 2,026,614 31 | 5,625 00 | 218,356 15 | 741,111 25 | 236,992 62 | 24,319 91 | 1,27 | 90520 |
|  | ..... ........... | 506,82508137505015015015000050 | $\left.\begin{array}{r} 21600 \\ 70,25478 \\ 6,347 \\ 3,671 \\ 1, \\ 1,088 \\ 79 \end{array} \right\rvert\,$ |  |  |  |  |  |
| 4,19799 6080 | 698,34640 169,94958 |  |  | 496,19480 166,26780 | 28,878 24 | 95481 | 19400 | $\begin{array}{r} 2686 \\ 780 \end{array}$ |
|  | 8,800 39 |  |  | 33170. |  |  |  |  |
|  | 11,558 78 |  |  | 1050 |  |  | 12888 | 140 |
| 1660 | 11,845 11 |  |  | 50850 |  |  |  |  |
|  |  |  |  | 4449 | .............. |  | 4074 |  |
| 3495 | 14,972 29. |  |  | 36160 |  |  |  |  |
| 4,684 51 | 915,469 85 | 28 | 81,578 67 | 663,719 39 | 28,878 24 | 95481 | 36362 | $360{ }^{6}$ |
|  | 1013 4585 87 | 25000 |  | 11,34060147,63760 | $\left\|\begin{array}{r} 10,487 \\ 131 \\ 16 \end{array}\right\|$ | 57276 | -1.1.1.0. | $\left\lvert\, \begin{array}{r} 51150 \\ 900 \end{array}\right.$ |
| 71667 | $\begin{array}{rl} 45,855 & 87 \\ 1,004 & 14 \\ 55 & 08 \end{array}$ |  |  |  |  |  |  |  |
|  |  |  |  | 4,700 80 |  |  |  |  |
| 7166 | 47,016 391 | 25000 | 11,774 08 | 184,349 90 | 10,618 31 | 57276 | 2855 | 2050 |
|  | $\begin{array}{r} 1,886 \\ 81,479 \\ 50 \end{array} .$ |  |  | $8,41880$ |  |  | 466 |  |
| 56493 |  | 15000 | 5,927 15 | 131,020 90 | $8,74601$ | 1,986 15 |  | 50280 |
| 56493 | 83,366 07 | 150 | 5,927 15 | 139,439 70 | 8,746 01 | 1,986 15 | 466 | 50280 |
| 1,114 59 | 12,536 46 | 15000 | 3,402 22 | 34,719 60 | 19751 |  |  |  |
| 18639 | 11,758 15 | 15000 | 63046 | $6,99114$ | ............. | .......... | ........ .... | .......... |
| 84 | 3,132 50 | 45000 | 6,040 74 | 5,118 70 | 12000 |  |  | 000 |
| 71,631 | 3,099,893 43 14,188 28 |  | 327,709 47 | 1,775,449 68 | 285,052 69 | 27,833 63 | 1,674 93 | 5,974 56 |
|  | 1,806 71 | 22500 | 7,554 94 | 1,47375 |  |  | 1,450 41 | 6000 |
|  | 3,098,086 72 | 13,963 28 | 320,154 53 | 1,773,975 93 | 285,552 69 | 27,833 63 | 22452 | 5,984 86 |

Inland Revenue Department, Ottawa, 31st July, 1876.

## 1875--76.

in Account with Rerenue.
Appendix A.)
Cr.

A. BRUNEL, Commissioner.

Dr．

|  |  |  |  | Total． | Division． |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \＄cts． | $\begin{array}{lll}\$ & \text { cts．} \\ 446 & 57\end{array}$ | \＄${ }_{4}$ cts． | \＄cts．1 | $\begin{array}{lll}\$ & \mathrm{cts} . \\ 451 & 53\end{array}$ | Algoma | $\$ \mathrm{cts}$ ． |
| 4398 | 3，813 57 | 3664 |  | 3，894 19 | ．．Belleville |  |
|  | 2，742 84 | 4996 |  | 2，792 80 | ．．．．．．Cobourg |  |
|  | 84206 | 1604 |  | 85810 | ．．．．．．Collingwood．．．．．．．．．．．．． |  |
|  | 1，109 93 | 632 |  | 1，116 25 | ．．．．．．Cornwall ．．．．．．．．．．．．．．．．． |  |
| 2000 | 5，469 65 | 7034 |  | 5，559 99 | ．．．．．．Goderich ．．．．．．．．．．．．．．．． |  |
|  | 12，543 62 | 20555 |  | 12，749 17 | ．．．．．Guelph ．．．．．．．．．．．．．．．．．．． |  |
|  | 8，315 86 | 14732 |  | 8，463 18 | ．．．．．Hamilton ．．．．．．．．．．．．．．．．． |  |
|  | 3，991 03 | 5592 |  | 4，046 95 | ．．．．．．Kingston |  |
|  | 9，423 14 | 15326 |  | 9，576 40 | ．．．．．．London．． |  |
|  | 3，623 47 | 6796 | ．．．．．．．．．．．．．． | 3，691 43 | ．．．．．．Ottawa ．．．．．．．．．．．．．．．．． |  |
|  | 6，262 68 | 10396 |  | 6，366 54 | ．．．．．Paris． |  |
|  | 77275 | 1396 |  | 78671 | ．．．．．．Perth ．． |  |
|  | 1，332 84 | 2596 |  | 1，358 80 | ．．Peterboro |  |
|  | 4，469 39 | 6796 | ．．．．．．．．．．．．．． | 4，537 35 | ．Prescott |  |
|  | 3，97255 | 5595 |  | 4，028 51 | ．．．．．．Sarnia．．．．．．．．．．．．．．．．． |  |
|  | 4，017 37 | 6600 |  | 4，083 37 | ．．．．．）．St．Catharines ．．．．．．．．．． |  |
|  | 17，548 62 | 28392 |  | 17，832 54 | ．．．．．．Toronto |  |
|  | 14，504 21 | 23033 | 4908 | 14，783 62 | ．．．．．．Windsor | 4908 |
| 231 | 10，328 56 | 16788 | ．．．．．．．．．．．．．． | 10，727 77 | ．．．．．．District Inspectors ．．．． |  |
| 29531 | $115,530-61$ | 1，830 20 | 4908 | 117，705 20 | ．．．．．．．．Ontario | 4908 |
|  | 50512 | 96 |  | $510 \mathrm{C8}$ | ．Beauharnois | 609 |
| 9588 | 21，656 72 | 31784 |  | 22，079 44 | ．．．．．Montreal |  |
|  | 8，752 26 | 15392 | ．．．．．．．． | 8，906 18 | ．．．．Quebec ．．．．．．．．．．．．．．．．．．． | 3006 |
|  | 73172 | 1200 |  | 74372 | ．．．．．．St．Hyacinthe．．．．．．．．．．． |  |
| 2017 | 85076 | 992 | ．．．．．． | 88085 | ．．．．．St．John＇s． |  |
| 3346 | 40683 | 496 | ．．．．．．．．．．．．． | 44525 | Sherbrooke |  |
|  | 45269 | 496 |  | 45765 | ．．．．．．Terrebonne |  |
|  | 82136 | 1396 | ．．．．．．．．．．．．． | 82532 | ．．．．．Three Rivers．．． |  |
|  | 29400 | 600 | ．．．．．．．．．．．．．． | $\begin{array}{r}300 \\ 464 \\ \hline 64\end{array}$ | ．．．．．．Magdalen Islands ．． |  |
| 27466 | 4，290 25 | 7996 | ．．．．． | 4，644 87 | ．．．District Inspectors ．．．．． | ．．．．．．．．．．．． |
| $42 \pm 17$ | 38，761 71 | 60848 |  | 39，791 36 | ．．．．．．Quebe | 3615 |
|  | 59169 | 632 |  | 59801 | ．．．．．．Cape Breton |  |
|  | 5.23053 | 8273 |  | 5，313 26 | ．．．．．．Halifax |  |
|  | 1，463 68 | 898 632 | ．．．．．．．．．．．． | 1，472 66 | ，．．．．．Pictou | 6428 |
| 25 16390 | 53641 | 632 | ．．．．．．．．．．．． | $\begin{array}{r}567 \\ 1,976 \\ \hline\end{array}$ | ．．．．．．Yarmouth ．．． |  |
| 16392 | 1，782 61 | 3000 | ．．．．． | 1，976 53 | ．．．．．．District Ins！ | ．．．．．．．．．．．．． |
| 18892 | 9，604 ${ }^{92}$ | 13435 |  | 9，928 19 | ．．．．．．．．Noin Scotia | 6428 |
|  | 1，048 84 | 1996 |  | 1，068 80 | ．．．．．．Miramichi |  |
|  | 4,95052 | 8175 | ．．．．．．．．．．．． | 5，032 27 | ；．．．．．St．John．．．．．．．．．．．．．． |  |
|  | 2，128 22－ | 3600 | ．．．． | 2，164 22 | ｜．．．．．District Inspector |  |
|  | 8，127 58. | 13771 |  | 8,26529 | New Brunsuck |  |
| 10000 | 3，626 40 | 4428 |  | 3，770 68 | ．．．．．Prince Edward Island． |  |
|  | 4，193 52 | 6012 |  | 4,25364 | ．．．．．．Manitoba ．．．．．．．．．．． |  |
| 5525 | 6，107 99 | 10016 | ．．．．．．．．．．．．． | 6，263 40 | ．．．．．．British Columbia．．．．．．．． |  |
|  | 20，151 09 | 4800 |  | 20，199 09 | ．．．．．．General contingencies | ．．．．．．．．． |
|  | 15628 |  |  | 15628 | ．．．．．．Law Costs．．．．．．．．．．．．． |  |
|  | 4，109 98 |  |  | 4,109 1 1688 | ．．．．．．Queen＇s Printer．．．．．．．． | 22652 |
|  | 1，668 99 |  |  | 1,66899 1,73937 |  | 16181 |
|  | 1,73937 1,799 |  |  | 1,73937 1,799 | ．．．．Preventive Service．．．．． |  |
| …．．．．．．．．．．．． | 1，799 48 | ……．．．．．．．．． |  | 1，799 48 | ．．．．Com．to Cus．Officers．．｜ | $\cdots$ |
| $1, \overline{0} 6 \overline{365}$ | 215，577 92 | 2，963 30 | 4908 | 219，633 95 | ．．．．．．．．Grand Total．．．．．．．．．．｜ | $5 \overline{3784}$ |

[^7]
## 1875-76.

in account with Expenditure.
Appendix B.)
Cr.

Expenditure authorized by the Department.


CANALS, \&ce,
Dr.
No. 5.-Collectors of Canal Tolls,

| ```Balances due 1st Jaly, 1875.``` | Canal Revenue. |  |  |  | Total Canal Revenue Accrued. | Hydraulic Rents and other Revenues from Public Works, vide Statements 8 and 9 . | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tolls. | Wharfage and Storage. | Fines and Damages. | Other Receipts. |  |  |  |
| \$ ets. |  | \$ cta. | \$ cts. | \$ cts. | \$ cts. | \$ ${ }^{\text {P }}$ | $\begin{array}{cc} \$ & \operatorname{ctg} \\ 136,887 & 01 \end{array}$ |
| 99304 | 70,390 78 | ............ |  |  |  | 62330 | 72,007 12 |
| 14668 | 95414 |  | ............. |  |  | 55340 | 1,654 22 |
| 10914 | 92250 |  |  |  |  | 386 | 1,035 50 |
| 29805 | 2,496 58 |  | 1,900 00 |  |  | 3600 | 4,730 63 |
| 15173 | 1,461 17 |  | 36013 |  |  | 2,163 20 | 4,136 23 |
| ................ | 11954 |  |  |  | ................ |  |  |
| 1,698 64 | 213,066 68 | ... ... ...... | 2,260 13 | .............. | ....... .......... | 3,544 80 | 220,570 25 |
| 12652 | 3,073 48 | 600 | 24900 |  |  | 1,289 30 | 4,744 30 |
| 20200 | 21,762 13 | . | 1300 |  |  | 8000 | 22,057 13. |
| 2752 | 48368 |  |  |  | ................ | 60800 | 1,119 20 |
| 62650 | 2,869 35 | 112668 | 1000 | 26448 | ................ |  | 3,897 01 |
| 14840 | 28,942 73 | 11,134 00 | 1,692 00 | 1,059 36 |  | 11,331 70 | 54,308 19 |
| 39503 | 16,848 38 |  |  |  |  |  | 17,243 41 |
| 1,525 97 | 73,979 75 | 11,266 68 | 1,964 00 | 1,223 84 |  | 13,309 00 | 103,369 24 |
| 10388 | 5,322 21 | 500 | 1000 | .... |  | ...... | 5,441 09 |
| ........... 103 | 16,70602 56969 |  |  |  |  |  | 16,706 02 |
|  |  | ............. | ... | .... ........ | , | ........... | 67306 |
| 20725 | 22,597 92 | 500 | 1000 |  | .......... ....... |  | 22,820 17 |
| 43543 | 22,52287 8,34200 |  |  |  |  |  | 22,522 84 |
| 43548 135 | 8,34200 824 80 | .................. |  | $\begin{array}{r} 400 \\ 3200 \end{array}$ | .................. | ................................. | $\begin{array}{r} 8,811 \\ \mathbf{9 9 2} \\ 58 \end{array}$ |
| 12802 | 3,10728 | ... | 500 |  |  |  | 3,240 30 |
| 69923 | 34,796 95 |  | 3500 | 3600 |  |  | 35,567 18 |
| 005 22444 | 2,45981 2,78037 | 26475 |  | 17400 |  | 87925 62900 | 3,77786 3,63381 |
| ... ......... | +474 50 |  |  |  |  |  | 47450 |
| 22449 | 5,714 68 | 26475 |  | 17400 |  | 1,508 25 | 7,886 17 |
| 15822 | 4,013 66 |  |  |  |  |  | 4,17188 |
| 8967 | 65490 |  |  |  |  |  | 74457 |
| ................. | 9984 | ............... |  | 050 | ................. | ..................... | 10034 |
|  |  |  |  |  |  | 66000 | 66000 |
|  |  |  |  |  |  | 1,810 00 | 1,810 00 |
|  |  |  |  |  |  | .................... | 21200 |
| 31200 |  |  | - |  |  |  |  |
|  |  |  |  |  |  | 2,470 00 | 2,782 00 |
| 4,915 47 | 354,924 38 | $\begin{aligned} & 11,53643 \\ & \ldots . . . . . . . . . . . ~ \end{aligned}$ | 4,269 13 | 1,534 34 | $\begin{array}{r} 372,26428 \\ 2,75929 \end{array}$ | $20,83265$ | 398,011 80 |
| .......... | ...... |  |  |  | 369,504 99 | .......... |  |

Inland Revenue Department, Ottawa, 31st July, 1876.

## 1875-76.

\&e., in account with Revenue.
Cr.


Dr.

| $\left\lvert\, \begin{gathered} \text { Balance due } \\ \text { by } \\ \text { Collectors, } \\ \mathbf{8 c . 1 s t} \text { July, } \\ 1875 . \end{gathered}\right.$ | Amounts received from Department to meet Expenditure | Deduction from Salaries for Superannuation. | $\left\lvert\, \begin{gathered} \text { Balance due } \\ \text { to } \\ \text { Collectors, } \\ \text { \&c., } \\ \text { 30th June, } \\ 1876 . \end{gathered}\right.$ | Total. | Collection Divisions. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | Welland Canal. |
| ................. | 2,81792 | 5008 | ......... | 2,868 00 | Port Colborne ................... |
| .......... | 1,335 37 | 2400 | .... | 1,359 37 | ..Port Dalhousie.................... |
| ............... 2500 | 74956 64056 | 1500 694 | ............... | 76456 67250 | .......... Dunnville ............ .............. |
|  | 74842 | 1200 |  | 76042 | .........Port Robinson................... |
| 800 | 21624 | 404 |  | 22828 | ..........St. Catharines ..................... |
| 3300 | 6,508 07 | 11206 |  | 6,653 13 | .Totals |
| 2500 | 1,118 07 | 1696 |  | 1,160 03 | St. Lavrence Canals. ....Beauharnois. ...... ............... |
| ............... | 92641 | 1604 |  | 94245 | Cornwall |
| ................. | 7,043 95 | 10373 |  | 7,147 68 | res |
|  | 2,047 13 | 2330 |  | 2,070 43 | Lachine ............................ |
| 2500 | 1,155 04 | 1996 |  | 1,200 00 | ......... Edwardsburg ............. ........ |
| 5000 | 12,290 60 | 17999 |  | 12,520 59 | Totals |
|  | 1,500 29 | 2828 |  | 1,526 57 | Chambly Canal. $\qquad$ Chambly |
| ......... ........ | 83523 | 1604 |  | 85127 | ... St. John's ......................... |
| ................ | 51738 | 632 | ................. | 52370 | St. Ours.. |
| ................ | 2,852 90 | 4864 |  | 2,901 54 | .Totals |
|  | 95059 | 1904 |  | 96963 | Ottawa Canals. $\qquad$ |
| .. | 51896 | 632 |  | 52528 | .........Carillon ... |
| .. | 90498 | 1746 |  |  | .........St. Anne's Lock. ................* |
| ................. | 2,374 53 | 4282 |  | 2,417 35 | Totals |
|  | 1,596 22 | 1604 |  | 1,612 26 | Rideau Canal. |
| ......... ......... | 25567 | 248 |  | 25815 | ....Kingston Mills......... .......... |
| ..... | 21627 | 248 |  | 21875 | Smith's Falls |
|  | 2,068 16 | 2100 |  | 2,089 16 | ...Totals ...................... |
| -........ ........ | 29628 | 372 |  | 30000 | ......... Burlington Bay Canal ........* |
| ................ | 6000 |  |  | 6000 | . Newcastle District Works. |
| 4288 | 1,568 71 | 2804 |  | 1,639 63 | . Inspector R. Bell |
| ................ | 21185 |  |  | 21185 | ...General Contingencies |
|  | 1,228 92 |  |  | 1,228 92 | .... Queen's Printer.................. |
| ... | 27731 |  |  | 27731 | ....Stationery Office ...... ......... |
| 12588 | 29,737 33 | 43627 | ................... | 30,299 48 | ........... Grand Total.................. |

Inland Revenue Department, Ottawa, 31st July, 1876.

## 1875-76.

in Account with Expenditure.
Appendix B.)
Cr.


A. BRUNEL, Commissioner.

No. 7.-SLIDES AND BOOMS REVENUE, 1875-76.

No. 71.-SLIDES ANL BOOMS EXPENDITURE, 1875-76.

Dr.

| $\begin{gathered} \text { Balance } \\ \text { due } \\ \text { 1st July, } \\ \text { 1875. } \end{gathered}$ | Accrued during year ended 30th June, 1876. |  | Total. | Name of Work. | Balance due to Lessees, 1st July, 1875. |  | $\begin{array}{\|c} \text { Paid } \\ \text { into hands } \\ \text { of } \\ \text { Collectors. } \\ \text { Vide } \\ \text { Statement } \\ \text { No. } 5 . \end{array}$ | Derosited to the credit of the Recciver General. | $\begin{gathered} \text { Balance } \\ \text { due } \\ \text { 30th June, } \\ 1876 . \end{gathered}$ | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ cts. | \$ cts. | \$ cts. | \$ cts. |  | \$ cts. | \$ cts. | \$ cts. | * cts. | \$ ets. | \$ cts. |
| 31,697 13 | 2,807 26 |  | 34,504 39 | Chaudiere Falls and Uttawa River |  |  | 36400 | 20100 | 33,920 39 | 34,504 39 |
| 5,06690 | 1,693 45 | ....... | 6,760 35 | Rideau Canal and River...... | -............ | -..... | 88925 | 1000 | 5,861 10 | 6,760 35 |
| 4,071 <br> 1,410 <br> 84 | 964 975 00 | ..................... | 5,035 00 <br> 2,385 <br> 84 | Williamsburg Canal........... | ................. | 8584 | 608 80 80 00 | …...... | 4,427 +200 2 | 5,035 2,385 24 |
| 1,198 50 | 1,374 30 | ..................... | 2,572 80 | \|Beauharnois do ............. |  | 858 | 1,289 30 | .............. | 1,28350 | 2,57280 |
| 44,417 17 | 13,674 70 | .................. | 58,091 87 | Lachine do ............ |  |  | 11,206 70 | ............... | 46,885 17 | 58,091 87 |
| 2,440 50 | 37350 | ... | 2,814 00 | Chambly do ........... |  | 2,253 10 | ${ }^{100} 00$ | 17000 | 29100 | 2,814 00 |
| 148 38,859 42 | 41 7,54517 | 8,7.......... | 18950 55,142 50 | Trent River Works............. | 4,998 44 | 1,364 00) |  |  | 38950 | 189 50 55,142 50 |
| 38,6967 | 1,979 33 | 8 8, | 2,049 00 | Sundry ............................... |  | 1,1609 | 1,835 00 | 135 <br> 21 | + 17700 | $\begin{array}{r}55,142 \\ 2,049 \\ \hline 00\end{array}$ |
|  |  |  |  | Land Sales. |  |  |  |  |  |  |
| 28,889 97 | 25,084 62 |  | 53,974 59 | Principal Accounts. |  |  |  | 25,08.162 | 28,889 97 | 53,974 59 |
| 22,630 34 | 93207 |  | 23,562 41 | Interest do . |  |  |  | 25,061 | 23,562 41 | 23,562 41 |
| 180,899 94 | 57,444 40 | 8,737 91 | 247,082 25 | .........Totals. | 4,998 44 | 3,718 84 | 19,522 25 | 25,643 12 | 193,199 60 | 247,082 25 |
| Inland Revenue Department, Ottawa, 31st July, 1876. <br> A. |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

$D_{\text {B. }}$

Dr.

No. 10尔-OULLERS' EXPENDITURE, 1875--76.

BILL STAMPS, 1875-76.

Dr.


Dr.


Inland Revenue Department, Ottawa, 81st July, 1876.

STAMPS, 1875--76.

## in account with Inland Revenue Department. $\quad \mathrm{Cr}_{\mathrm{R}}$



A. BRUNEL,<br>Commissioner.

No. 13.-Statement showing the Quantities of the several Articles subject 1874,1875 and 1876 , with


Inland Revenue Department, Ottawa, 31st July, 1876.

## to Excise Duty taken for Consumption, during the Years ended 30th June, the Duty collected thereon.



## A. BRUNEL, <br> Commissioner.

No. 14.-Statement of Amounts deposited monthly to the Credit of the Year ended

| 1875. | Ontario and Quebec. | New Brunswick. | Nova Scotia. | Other Provinces. | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Jolr :- |  | ${ }_{17,570}^{\$}{ }^{\text {cts. }} 18$ | $\begin{array}{cc} \$ & \text { cts. } \\ 15,642 & 50 \end{array}$ | $\begin{array}{cc} \$ & \text { cts. } \\ 6,008 & 30 \end{array}$ | $\begin{array}{r} \$ \mathrm{cts} \\ 412,425 \quad 43 \end{array}$ |
| Canals ................. | 43,878 96 |  | 159 80 |  | 43,968 66 |
| Hydraulic and ether Rent | 4,301 65 | ............... |  |  | 4,301 65 |
| Minor Public Works | 51572 | ... ...... |  |  | 51572 |
| Slides | 1,524 58 |  |  |  | 1,524 58 |
| Cullers | 5,139 34 |  |  |  | 5,139 24 |
| Bill Stamps. | 12,330 34 | 56430 | 48735 | 19000 | 13,57199 |
| Total | 440,884 94 | 18,134 48 | 16,219 55 | 6,198 30 | 481,447 27 |
| Excise and Seizures. | 348,479 60 | 21,996 96 | 14,747 19 | 5,509 26 | 390,733 01 |
| Canals ........ ............... | 65,611 52 |  | 11122 |  | 65,722 74 |
| Hydraulic and other Rents ...... | 1,916 50 | 43750 |  |  | 2,354 09 |
| Minor Public Works ................ | 47848 |  |  |  | $\begin{array}{r} 47848 \\ 5.80795 \end{array}$ |
| Callerp | 5,80795 9,849 |  |  |  | 5,80798 9,849 |
| Bill Stamps........................... | 21,368 04 | 99560 | 78327 |  | 23,146 91 |
| Total | 453,511 85 | 23,430 06 | 15,641 68 | 5,509 26 | 498,092 85 |
| Excise and Seizures. | 413,309 26 | 17,263 10 | 18,937 63 | 6,321 36 | 455,831 35 |
| Canals ............................... | 46,792 11 | ................. | 12152 |  | 46,913 6 |
| Hydraulic and other Rents...... | 11000 | ...... |  |  | 11000 |
| Yinor Public Works | 52191 | ................. |  |  | 58191 |
| Slides | 8,199 81 | ................. |  |  | 8,199 81 |
| Culler | 7,741 33 |  |  | …............ | $\begin{array}{r}7,741 \\ 18,238 \\ \hline 184\end{array}$ |
|  | 15,971 | 1,084 | 1,041 70 |  | 18,223 94 |
| Total | 492,645 76 | 18,348 00 | 20,100 85 | 6,447 36 | 537,541 97 |
| Fxalise and Seizures. | 458,827 01 | 25,108 71 | 20\373 41 | 8,544 87 | 512,854 00 |
| Canals ............. ...... ........... | 57,787 29 | ............ ..... | 6896 | ................. | 57,856 25 |
| Hydraulic and other Rents...... | 2,048 50 | ................ | ................. | ................. | 2,048 51 |
| Minor Public Works | 91344 | ................. | ................. | ................. | 91344 |
| Slides | 10,901 74 |  | ................ | ................. | 10,901 7 |
| Cull Stam.... | 10,72413 19,16657 |  |  |  | 10,724 13 |
| Bill Stamp | 19,166 57 | 37335 | 59660 |  | 20,136 |
| Total | 560,368 68 | 25,482 06 | 21,038 97 | 8,544 87 | 615,434 58 |
| Excise and Seizures. | 471,119 08 | 25,717 87 | 25,923 55 | 6,622 28 |  |
| Canals | 41,699 52 |  | 12051 |  | $41,82003$ |
| Hydraulic and other Rents ...... Minor Pnblic Works | 100 16195 | 43750 |  | . | 43850 16195 |
| Slides. | 3,092 48 |  |  |  | 3,092 48 |
| Cullers. | 5,737 17 |  |  |  | 5,737 11 |
| Bill Stamps.. | 15,726 02 | 74385 | 76000 | 12501 | 17,354 89 |
| Total | 537,537 22 | 26,899 22 | 26,804 06 | 6,747 29 | 597,987 79 |
| Excise and Seizures... | 454,775 83 | 20,386 03 | 30,019 17 | 5,470 82 |  |
| Canals $\qquad$ | 7,284 94 |  | 9256 | ................. | $\begin{array}{r} 7,37750 \\ 977 \\ 50 \end{array}$ |
| Hydraulic and other Rents ...... Minar Public Work | 94750 32161 | 3000 |  | .1.............. | 97750 32161 |
| Slides ............. | 23,139 7.0 |  |  |  | 23,139 70 |
| Qullers | 3,986 80 |  |  |  | 3,986 70 |
| Bhl Stamps... | 21,246 44 | 75810 | 89680 |  | 22,901 34 |
| Total | 511,702 72 | 21,174 13 | 31,008 53 | 5,470 82 | 569,356 20 |

Inland Revenub Department, Otpawa, 31st July, 1876.

Hon. the Receiver General on Inland Revenue Account, during the Fiscal 30th June, 1876.

| 1876. | Ontario and Quebec. | New Brunswick. | Nova Scotia. | Other Provinces. | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| January :- | \$ ets. |  |  | \$ cts. |  |
| Excise and Seizures | 510,787 19 | $14,76314$ | 19,455 78 | 7,545 93 | 552,552 04 |
| Canals .. ............................ | 69504 | ................ |  |  | 69504 |
| Mydraulic and other Rents..... | 4,656 20 | ................. |  |  | 4,656 20 |
| Minor Public Works .............. | 10668 |  |  |  | 10668 |
| Slides ................................ | 6,703 45 |  |  |  | 6,709 45 |
| Bill Stamp | 96330 15,48558 | 66120 | 57000 | 9500 | 96330 16,81178 |
| Frbroare : Total | 530,394 44 | 15,424 34 | 20,025 78 | 7,640 93 | 582,485 49 |
| Exicise and Seizures | 1,176,571 19 | 53,501 72 | 42,327 37 | 17,074 35 | 1,289,474 63 |
| Ganals. |  |  | 10600 |  | 1, 10600 |
| Hydraulic and other | 1,334 50 |  |  |  | 1,334 50 |
| Minor Public Works . | 14055 |  |  |  | 14055 |
| Slides |  |  |  |  |  |
| Cullers | 84058 |  |  |  | 84058 |
| Bill Stamps | 28,785 04 | 67545 | 68510 |  | 25,145 59 |
| Maber - Tot | 1,202,671 86 | 54,177 17 | 43,118 47 | 17,074 35 | 1,317,041 85 |
| Bxcise and Seizures................ | 146,686 12 | 7,649 56 | 10,859 63 | 6,055 02 | 171,250 33 |
| Hyaraulic and other Rents..................... | 25,14512 | 43750 |  |  |  |
| Minor Public W | 25,145 12 | 43750 |  |  | 25,592 62 |
| Slides. | 50351 |  |  |  | 50361 |
| Oullers. | 1,340 05 |  |  |  | 1,340 05 |
| Bill Stamps | 11,410 58 | 99750 | 76665 | 9500 | 18,269 73 |
| APRIL - Total | 185,204 13 | 9,084 56 | 11,626 28 | 6,150 02 | 212,064 99 |
| Excise and Seizu | 157,170 64 | 8,044 68 | 14,575 19 | 2,711 21 | 182,501 |
| Canals | 2,844 22 |  |  |  | 2,844 22 |
| Hydraulic and ot | 1,838 50 |  |  |  | 1,838 50 |
| Minor Public Works | 23464 |  |  | ......... | 23464 |
| Slides | 45129 | ................. |  |  | 45129 |
| Cullers..... | 74744 |  |  |  | 74744 |
| Bill Stamps....... | 11,296 84 | 19000 | 57000 | 1670 | 12,073 54 |
| Other Revenues | 350 |  |  | 析 | 350 |
| Max:- Total ........ ..... | 174,586 97 | 8,234 68 | 15,145 19 | 2,727 81 | 200,694 65 |
| Excise and Seizu | 225,313 26 | 12,725 61 | 20,213 89 | 5,294 86 | 263,547 62 |
| Canals Hydraulic ............... | 37,176 36 |  |  |  | 37,176 36 |
| Mfinor Public Works .. | 50250 | 46750 |  | ......... | 97000 |
| Slides .. | 3,012 14 |  |  |  |  |
| Cullers.... | $\begin{array}{r}3,01214 \\ 850 \\ \hline\end{array}$ |  |  | ......... | 3,012 850 |
| Bill Stamps...... | 23,069 69 | 1,271 12 | 81130 |  | 25;152 11 |
| Other Revenues | ${ }^{273} 30$ | 1,271 |  |  | 27330 |
| Jtha $=$ Total | 290,339 11 | 14,464 23 | 21,025 19 | 5,294 86 | 331,123 39 |
| Excise and Seizures | 260,273 96 | 15,794 82 | 20,797 04 | 8,202 07 | 305,067 89 |
| Hydraulic............. ........tm. | 61,44195 |  |  |  | 61,441 95 |
| Mydraulic and other Rents $\%$, | 13675 |  |  |  | 13675 |
| Slides. ................................ .. | 15405 |  |  |  | 15405 |
| Cullers........................................ | 22,47182 9 | ............ | , |  | 22,471 82 |
| Bill Stamps... | 9,20522 17,26397 | 1,039 30 | 89489 | 10347 | $\begin{array}{r}9,205 \\ 193 \\ \hline 18\end{array}$ |
| Other Revenu | 1,2411 50 | 18825 | 15705 |  | 1,586 80 |
| Total | 372,189 22 | 17,022 37 | 21,848 98 | 8,305 54 | 419,366 11 |
| Grand Total...... | 5,761,046 90 | 251,875 30 | 263,603 50 | 86,111 41 | 6,362,6宜14 |

- A. BRUNEL, Commissioner.

No. 15.-Comparative Monthly

| From what Source. | July. | August. | September. | October. | November. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SPIRITS ................... $\left\{\begin{array}{l}1874-75 . . . . \\ 1875-76 . . . .\end{array}\right.$ <br> Increase in 1875-76 <br> Decrease in 1875-76, | $\begin{array}{r} \$ \quad \text { cts. } \\ 137,44299 \\ 230,92842 \end{array}$ | $\begin{array}{cc} \$ & \text { cts. } \\ 162,949 & 38 \\ 228,561 & 57 \end{array}$ | $\begin{array}{cc} \$ & \text { cts. } \\ 214,689 & 27 \\ 268,031 & 81 \end{array}$ | $\begin{array}{cc} \$ & \text { cts. } \\ 316,570 & 71 \\ 296,731 & 38 \end{array}$ | $\begin{array}{cc} \$ & \mathrm{cts} . \\ 381,132 & 18 \\ 305,851 & 53 \end{array}$ |
|  | 93,485 43 | 65,612 19 | 53,342 54 | 19,839 33 | 75,280 65 |
| MALT LIQUOR....... $\left\{\begin{array}{l}1874-75 \ldots . . . \\ 1875-76 \ldots .\end{array}\right.$ <br> Increase in 1875-76 <br> Decrease in 1875-76. | 5,050 4,800 4 | 1,484 <br> 1,357 <br> 18 | $\begin{aligned} & 2,802 \quad 18 \\ & 2,28569 \end{aligned}$ | $\begin{array}{ll} 1,840 & 16 \\ 2,089 & 15 \end{array}$ | $\begin{array}{ll} 2,987 & 04 \\ 2,351 & 01 \end{array}$ |
|  | 25000 | 12669 | 51649 | 24909 | 63603 |
| MALT ...................... $\left\{\begin{array}{l}1874-75 . . . . \\ 1875-76 \ldots . .\end{array}\right.$ <br> Increase in 1875-76, $\qquad$ <br> Decrease in 1875-76 $\qquad$ | 10,01181 10,42584 | 13,10749 13,840 | $\begin{aligned} & 27,423 \quad 85 \\ & 27,081 \quad 77 \end{aligned}$ | $\begin{aligned} & 36,46382 \\ & 31,35878 \end{aligned}$ | $\begin{array}{ll} 38,917 & 09 \\ 37,142 & 30 \end{array}$ |
|  | 41403 | 73278 | 34208 | 5,105 04 | 1,774 79 |
| $\begin{array}{r} \text { TOBACCO .............. }\left\{\begin{array}{l} 1874-75 . . . .\} \\ 1875-76 . . . \end{array}\right. \\ \text { INCREASE in 1875-76................. } \\ \text { Decrease in 1875-76 ............. } \end{array}$ | $\begin{array}{r}96,543 \\ 138,335 \\ \hline 15\end{array}$ | $\begin{aligned} & 122,55547 \\ & 126,46857 \end{aligned}$ | $\begin{aligned} & 157,807 \\ & 157,198 \\ & 35 \end{aligned}$ | $\begin{aligned} & 157,960 \\ & 152,475 \\ & 33 \end{aligned}$ | $\begin{aligned} & 138,12962 \\ & 161,528 \quad 56 \end{aligned}$ |
|  | 41,792 48 | 3,913 10 | 60887 | 5,485 50 | 23,398 94 |
| PETROLEUM........... $\left\{\begin{array}{l}1874-75 . . . . \\ 1875-76 . . .\end{array}\right.$ <br> Increase in 1875-76 <br> Decrease in 1875-76 | 11,418 <br> 11,121 <br> 10 | $\begin{aligned} & 22,97687 \\ & 16,87555 \end{aligned}$ | $\begin{aligned} & 37,49002 \\ & 30,37257 \end{aligned}$ | $\begin{aligned} & 43,12967 \\ & 41,818 \quad 71 \end{aligned}$ | $\begin{array}{ll} 35,672 & 02 \\ 38,867 & 22 \end{array}$ |
|  | 29617 | 6,101 32 | 7,117 45 | 1,310 96 | ${ }^{9}, 19520$ |
| MANUFACTURES IN BOND. | 3,40383 2,427 | $\begin{aligned} & 3,38191 \\ & 2,86562 \end{aligned}$ | $\begin{aligned} & 3,458 \quad 79 \\ & 2,844 \\ & 76 \end{aligned}$ | $\begin{aligned} & 3,38530 \\ & 2,56433 \end{aligned}$ | $\begin{aligned} & 4,33267 \\ & 2,90743 \end{aligned}$ |
| Ircrease in 1875-76................. Decrease in 1875-76 | 97666 | 51629 | 61403 | 82097 | 1,425 24 |
| SEIZURES ............. $\left\{\begin{array}{l}1874-75 . . . . \\ 1875-76 . . .\end{array}\right.$ | 180 5100 |  |  | 1,82092 800 | 10000 466 |
| Inorease in 1875-76................. <br> Decrease in 1875-76 | 4920 |  |  | 1,812 92 | 9534 |
| OTHER RECEIPTS.. $\left\{\begin{array}{l}1874-75 \ldots . . . \\ 1875-76 \ldots . .\end{array}\right.$ <br> Increasa in 1875-76 $\qquad$ <br> Decrease in 1875-76 | $\begin{aligned} & 45986 \\ & 98825 \end{aligned}$ | $\begin{aligned} & 36875 \\ & 55780 \end{aligned}$ | $\begin{aligned} & 37800 \\ & 40630 \end{aligned}$ | $\begin{aligned} & 32296 \\ & 37650 \end{aligned}$ | $\begin{aligned} & 47279 \\ & 49260 \end{aligned}$ |
|  | 52839 | 18905 | 2830 | 5354 | 1981 |
|  |  | 63,702 82 | 44,171 92 | 34,07209 | 52,598 10 |

## Inland Revenue Department,

Ottawa, 31st July, 1876.

REVENUE.
Statement, 1874-75 and 1875-76.

No. 16.-REFUNDS, 1875-76


No. 16.-REFUNDS, 1875-76.-Goncluded.
canal tolls, so.-Concluded.

DR,



WEIGHTS AND MEASURES' STAMPS, 1875-76.
No. 19.-Stamp Distributors in account with Inland Revenue Department Dr.

Cr.


WEIGHTS AND MEASURES＇STAMPS，1875－76．－Continued．
No．19．－Stamp Distributors in account with Inland Revenue Department． DR．

Cr．

| Division． |  | Balance，30th | June， 1876. | Total． |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Stamps on hand． | Cash on hand． |  |
| \＄cts．Nova Scotia． | \＄cts． | $\$$ cts． | \＄cts． | \＄cts． |
| 1，150 $00 \mid$ ．．．．Cape Breton．．．．．．．．．．．．．．．．．．．．．．． | $\cdot$ | 1，150 00 | ．．．． | 1，150 00 |
| I，160 00 ．．．．．Guysboro．．．．．．．．．．．．．．．．．．．．．．．．．．． |  | 1，160 00 |  | 1，160 00 |
| 4，060 00 $\ldots$ ．．．．Halifax．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 13705 | 3，922 95 | ．．．．．．．．．．．．．．．． | 4，060 00 |
| 1，450 00 ．．．．．．1nverness ．．．．．．．．．．．．．．．．．．．．．．．．．．． | ．．．．．．．．．． | 1，450 00 | ．．．． | 1，45000 |
| 1，450 00 ．．．．．．Lunenburg ．．．．．．．．．．．．．．．．．．．．．．．． |  | 1，450 00 |  | 1，450 00 |
| 1，450 00 ．．．．．．Pictou ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  | 1，450 00 | ．．．． | 1，450 00 |
| 1，740 00 ．．．．．．Yarmouth | ．．．．．．．．．．．．．．．． | 1，740 00 | ， | 1，740 00 |
| 12，460 00 ，．．．．．．．Total Nova Scotia ．．．．．．．．．．．．． | 13705 | 12，322 95 | ．．．．．．．． | 12，460 00 |
| 1，160 00 |  | 1，160 00 |  | 1，160 00 |
| 49，509 20 ．．．．．．．．Grand Total．．．．．．．．．．．．．．．．．．．． | 1，475 30 | 47，781 75 | 25215 | 49，509 20 |

A．BRUNEL，<br>Commissioner．<br>Inland Revenue Department，<br>Ottawa，31st July， 1876.

No. 20.-Stamp Distributors in account with Inland Revenue Department. Dr.

Cr .


A. BRUNEL,<br>Commissioner.

Inland Revenue Department, Ottawa, 31st July, 1876.



|  <br>  | $\begin{array}{\|l} \infty \\ \infty \\ \infty \\ \infty \\ \infty \\ \\ \end{array}$ |  <br>  | $\begin{aligned} & = \\ & 0 \\ & \eta \\ & \approx= \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| ！ | $\vdots$ |  | （8 |
|  |  |  | 第磍 |
| ¿ | 禹 |  | $\vdots$ <br> $\vdots$ <br> $\vdots$ <br> $\vdots$ |
|  | 过 |  | $\vdots$ <br> $\vdots$ <br> $\vdots$ |
|  <br>  | $\begin{aligned} & n \\ & \infty \\ & \infty \\ & \underset{\sim}{0} \\ & \end{aligned}$ |  <br>  <br>  <br>  | ＋ |
|  | $\begin{gathered} \dot{\vdots} \\ \vdots \\ \vdots \\ \vdots \\ \text { 号 } \\ \text { हु } \\ 0 \end{gathered}$ |  |  |
|  <br>  | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \infty \\ & \infty \\ & \infty \\ & \end{aligned}$ |  <br>  | E－ ¢ $=$ $=$ |
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|  | 㕲 |  |  |
|  <br>  | न 0 0 0 0 |  <br>  | － |
|  |  |  |  |




No. 22.-Inspection Districts in account with Expenditure.
DR. (For Details, see Appendix B.)
Cr.


A. BRUNEL<br>Cummissioner.

Inland Revenue Department,
Ottawa, 31st July, 1876.

No. 23.-Statement showing the Amount Voted, and the Expenditure Authorized, for each Service for 1875-76.


## A. BRUNEL, Commissioner.

[^8]
## APPENDIX A.

## STATISTICS.

## APPENDIX A.-SPIRITS.

No. 1-REturn of Manufacturek

| Retexce Divisions. | Quantities of grain for distillation. <br> Lbs. | Number of Licertgel issued andr amount collected. |  |
| :---: | :---: | :---: | :---: |
|  |  | No. | Amount. |
|  |  |  | \$ $\mathrm{cts}^{\text {cta}}$ |
| Belleville ......................................... ............................. | 1,174,380 | 1 | 25000 |
| Guelph ......................... ................................................. | 6,442,251 | 2 | 50000 |
| Perth............................... .............................................. | 152,040 | 1 | 25000 |
| Prescott................................ ........ .............................. | 7,968,803 | 1 | 25000 |
| Toronto ...................... ......................................... ........ | 16,302,000 | 1 | 25000 |
| Windsor.... ...................... ............................................. | 27,429,035 | 4 | 87500 |
| Victoria, B. 0 ................................. ............................ | 3,620 | 1 | 25000 |
| St. Catharines, Rectifier's License........................................ | .............. | 1 | 25000 |
| Totals ...................................................... | 59,472,129 | 12 | 2,87500 |
| Inland Revenue Department, Ottawa, 31st July, 1876. |  |  |  |
|  |  |  |  |  |

the Year ended 30th June, 1876.

| Proof Spirits manufactured at 90 c . per Imperial Gallon. |  | Duty collected ex-manufactory at 90 c . per Imperial Gallon. |  | Duty accruing on Spirits <br> Warehoused at 90 c . per Galion. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gallons. | Duty. | Gallons. | Duty. | Gallons. | Duty. |  |
|  | $\$$ cts. |  | \$ cts. |  | \$ cts. | \$ cts. |
| 60,628•73 | 54,565 84 | 3,939•44 | 3,545 46 | 56,689•29 | 51,020 38 | 3,795 46 |
| 335,122.27 | 301,609 99 | 187,171-48 | 168,454 41 | 147,950.79 | 133,155 58 | 168,954 41 |
| 7,729-57 | 6,956 58 | 87.08 | 7836 | 7,642-49 | 6,878 22 | 32836 |
| 422,975.58 | 380,677 97 | 71,726.22 | 64,553 48 | 351,249'36 | 316,184 49 | 64,803 48 |
| 825,244'\%0 | 742,720 19 | 109,247.88 | 98,323 13 | 715,996.82 | 644,397 06 | 98,573 13 |
| 1,459,418.19 | 1,313,476 34 | 437,618.87 | 393,856 69 | 1,021,799•32 | 919,619 65 | 394,731 69 |
| 226.55 | 20388 | 226-55 | 20388 | ................... |  | 45388 |
|  |  |  |  |  |  | 25000 |
| 3,111,345.59 | 2,800,210 79 | 810,017.52 | 729,015 41 | 2,301,328.07 | 2,071,195 38 | 731,890 41 |

## A. BRUNEL, <br> Commissioner.

## APPENDIX A.-Gontinued.-SPIRITS.

## No. 2-Comparative Statement of Spirits



- Soar Beer.

Inland Revenue Department, Ottawa, 31st July, 1876.

## Manufactured for the Years ended 30th June, 1875-76.


A. BRUNEL,

Commissioner.

APPENDIX A.-Continued.-SPIRITS.

Dr.


Inland Revenue Department,
Ottawa, 31st July, 1876.
for the Year ended 30th June, 1876.
Cr.

| Spirits Ex- for d 90 cents per In | arehoused ty at erial Gallon. | Spirits removed to other Divisions. | Spirits Exported. | Spirits used in Bonded Factories, $\& c$. |  | Totals. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gallons. | $\begin{gathered} \text { Duty. } \\ \$ \mathrm{cts} . \end{gathered}$ | Gallons. | Gallons. | Gallons. | Gallons. | Gallons. |
| 6,842.08 | 6,158 00 |  |  |  | 2,627-25 | 9,469 33 |
| 56,301 78 | 50,671 63 | 20,471 01 |  |  | 33,495.75 | 110,268 54 |
| 12,616.41 | 11,354 73 | $144 \cdot 62$ |  |  | 2,508.04 | 15,269 07 |
| 12,126.24 | 10,913 61 |  |  |  | 1,388.29 | 13,514 53 |
| 3,802 87 | 3,422 60 |  |  |  | 1,388 | 3,802 87 |
| 24,786•9 | 22,308 14 | 1,477.93 |  |  | 4,536-13 | 30,800 95 |
| 58,907.85 | 53,016 97 | 70,668.91 |  |  | 46,187.54 | 175,764 30 |
| 54,986.76 | 49,488 34 |  |  | 113,176 40 | $34,998 \cdot 77$ | 203,161 93 |
| 75,537•04 | 67,983 40 | 3,046.10 |  | $\left\{\begin{array}{r}6,363 \cdot 02 \\ +3 \cdot 33\end{array}\right\}$ | 14,156 02 | 99,105 61 |
| 39,922.51 | 35,930 45 |  |  |  | 6,367.61 | 46,290 12 |
| 110,192.14 | 99,179 22 |  |  | ................. | 20,270 47 | 139,706 36 |
| 43,10306 | 38,792 75 | 24375 |  |  | 4,599-42 | 47,702 48 |
| 9:516.03 | 8,564 29 | ................. | ................ | $\cdots$ | 16,639•00 | 26,155 03 |
| 20,594.18 | 18.53423 |  |  | ........... | 1,557.26 | 22,151 44 |
| 57,613.90 | 51,852 45 | 301,788.09 |  | +148.74 | 103,108.32 | 462,658 95 |
| 16,504•89 | 14.85378 |  |  | 1,223.09 | 3,174•58 | 20,902 56 |
| 30,671 35 | 27,604 28 | $448 \cdot 57$ | 31.28 | … $3 . . .1 . . . . .1$ | 4,61350 | 35,764 70 |
| 479,649•78 | 431,684 79 | 740,365.63 | 56,378.37 | $\left\{\begin{array}{c}34,080 \cdot 39 \\ \dagger 94 \cdot 15\end{array}\right\}$ | \} 402,524•19 | 1,713,092 51 |
| 325,404•72 | 292,864 12 | 665,852 89 | 24,806.19 | 3,141.44 | 358,71593 | 1,377,921 17 |
| 775,941-39 | 698,346 40 | 59,942•10 | 757.44 | $\left\{\begin{array}{r}7,428 \cdot 97 \\ +1,219 \cdot 92\end{array}\right.$ | \} $115,559 \cdot 41$ | 960,849 13 |
| 188,832.73 | 169,949 58 | $187 \cdot 75$ | 61.50 |  | 20,377-20 | 209,459 18 |
| 9,778-10 | 8,800 39 |  |  |  | $216 \cdot 50$ | 9,994 60 |
| 12,840.10 | 11,555 78 |  |  |  | 1,027 94 | 13,868 04 |
| 13,161-32 | 11,845 11 |  |  |  |  | 13,161 32 |
| 16,635 84 | 14,972 29 | .... ...... |  |  | $62 \cdot 78$ | 16,698 62 |
| 2,096-22 | 1,886 57 |  |  |  | 1,187•66 | 3,283 88 |
| 90,531.49 | 81,479 50 | 1,679•10 | ........ ........ | 15,505.27 | 47,432-10 | 155,147 96 |
| 112.39 | 10130 |  |  |  | 124.94 | 23733 |
| 50,951•13 | 45,855 87 | $537 \cdot 29$ | 1,083.85 | 1,341-43 | 11,619•74 | 65,533 44 |
| $1,115 \cdot 68$ 61.20 | 1,004 14 |  |  |  | $267 \cdot 03$ | 1,382 71 |
| 61.20 $13,790.66$ | 5508 12,41147 | 2,162-21 |  |  |  | 6120 75458 |
| 138.88 | 12,414 129 | 2,162 |  |  | 80 | 6,75458 13888 |
| 13,064.46 | 11,758 15 |  |  |  | 5,112.98 | 18,177 44 |
| 2,976 10 | 2,678 62 |  |  |  | 2,528.05 | 5,504 15 |
| 2.631,108.17 | 2,368,003 02 | 1,869,015.95 | $\begin{array}{r} 83,11863 \\ + \text { Less by } 0 \end{array}$ | $\|$$183,726 \cdot 05$ <br> $0.1,466 \cdot 04$ <br> $182,260 \cdot 01 \mathrm{U}$ | $1,276,786 \cdot 01$ | $6,043,75481$ <br> ies. |

A. BRUNEL,

Commissioner.

APPENDIX A.-Continued.-SPIRITS.

## No. 4.-Comparative Statement of Spirit Warehouse



[^9]
## Inland Revenue Department, <br> Ottawa, 31st July, 1876.

Returns for the Years ended June 30th, 1875--76.

| Duty collected on Spirits at 75 cts. per Gallon, Wine Measure. |  | Spirits removed to other Divisions. | Spirits Exported. | Spirits used in Bonded Munufactories, \&c. | Spirits remaining in Warehouse. | Totals. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gallons. | Duty. | Gallons. | Gallons. | Gallons. | Gallons. | Gallons. |
| 1,155,868.23 | 866,902 42 | 2,850,140.87 | 201,865•78 | 268,343.54 | 1,850,511.63 | 6,326,730.05 |
| 1,269,235.57 | 951,928 69 | $86,279 \cdot 07$ | 278.77 | 16,560.90 | 272,538.99 | 1,644,893.30 |
| 132,609 68 | 99,457 47 | 2,400.53 |  | 13,751•36 | 71,762•16 | 220,523.73 |
| $65,021 \cdot 32$ | 48,766 88 | 2,308.37 | 1,750.63 | 2,291•56 | 25,035-84 | 96,407•72 |
| 12,979.91 | 9,734 97 | $492 \cdot 40$ | $265 \cdot 50$ | .............. ... | 15,070.79 | 28,808.60 |
| 6,345•83 | 4,759 48 | .............. |  | .............. ... | 6,877.05 | 13,222.88 |
| 2,602 09 | 1,951 53 |  |  |  | 6,198•19 | 8,800.28 |
| 2,644,662.63 | 1,983,501 34 | 2,941,621-24 | 204,160-68 | 300,947•36 | 2,247,994.65 | 8,339,386 56 |

Imperial Measure, 90 cents per Gallon.

| 1,439,080.48 | 1,295,177 78 | 1,804,507.50 | 81,215.84 | $157,984 \cdot 34$ $=246 \cdot 22$ 7 | 1,070,467.97 | 4,553,502.35 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1,017,189 48 | 915,469 55 | $60,129 \cdot 85$ | $818 \cdot 94$ | $7,428 \cdot 97$ $\cdot 1,21982$ | 137,243.83 | 1,224,030.89 |
| 92,627•71 | 83,366 07 | 1,679•10 |  | 15,505.27 | 48,619 76 | 158,431-84 |
| 52,240-40 | 47,016 39 | 1,637.29 | 1,08385 | 1,341-43 | $12,011 \cdot 71$ | $\begin{array}{r}158,4314.68 \\ \hline 67\end{array}$ |
| 13,929-54 | 12,536 46 | 2,162.21 | , | , | 801.71 | 16.893.46 |
| 13,064-46 | 11,75815 | ................. | ................. | ................. | 5,11298 | 18,177.44 |
| 2,976.10 | 2,678 62 |  |  |  | 2,52805 | 5,504•15 |
| 2,631,108•17 | 2,368,003 02 | 1,869,015.95 | 83,118-63 | $\begin{array}{r} 183,726 \cdot 05 \\ \dagger 1,466.04 \end{array}$ | 1,276,786.01 | 6,043,754 81 |
|  |  |  |  | $\ddagger 182,260 \cdot 01$ |  |  |

- By Order in Council. $\dagger$ Less by Order in Council. $\ddagger$ Used in B. F. 1876.-Total Excise Duty collected on Spirits Ex-Manufactory and

| Ex-Warehouse $\qquad$ $\qquad$ | $\begin{array}{r} \$ 3,097,018 \cdot 43 \\ 2,875 \cdot 00 \end{array}$ |
| :---: | :---: |
|  | \$3,099,893-43 |

## A. BRUNEL, Commissioner.

APPENDIX A.-Continued.-MALT.
No. 5.-Return of Malt manufactured for the Year ended 30th June, 1876.


| St. John, X.B. | 2 | 300 | 26,141 | /........... ....... | 27,375 | 433,989 | 292,380 | 131,679 | 3,22380 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Halifax, N.S | 4 | 800 | 32,602 | ................... | 35,723 | 548,375 | 548,375 | $\ldots . . . . . . . . .$. | 6,283 75 |
| Charlotetown, P.E.I .. | 3 | 600 | 16,501 |  | 17,436 | 275,666 | 257,978 | 17,688 | 3,179 78 |
| Winnipeg, M | 1 | 200 | 2,200 |  | 2,383 | 43,046 | 43,046 |  | 63046 |
| Victoria, B.C ................... | 5 | 800 | 29,099 |  | 33,580 | 505,096 | 315,830 | 189,266 | 3,958 30 |
| To | 114 | 20,775 | 2,811,166 | 575 | 3,246,264 | 51,747,618 | 12,097,858 | 39,649,760 | 141,753 58 |

# A. BRUNEL, 

| Provinces. |  | $\begin{aligned} & \text { License } \\ & \text { Fees. } \end{aligned}$ | Barley used. | $\underset{\text { Other }}{\text { Orain. }}$ | $\left\lvert\, \begin{gathered} \text { Total } \\ \text { Grain used } \end{gathered}\right.$ | Malt Ma | factured. | $\begin{gathered} \text { Entered } \\ \text { for Duty Ex- } \\ \text { Manuuace- } \\ \text { tory. } \end{gathered}$ | $\left\lvert\, \begin{array}{\|c\|} \text { Malt } \\ \hline \end{array}\right.$ | Total Duty Collected Exx-Manufac on Licenge |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1875. | No. | \$ | M. | Cub. In. |  | Cub. In. | bs. | Lbs. | Lbs. | \$ cts. |
| Ontario.... Ouebec. | 85 <br> 16 <br> 1 | $\xrightarrow{\substack{15,600 \\ 2,750}}$ | 1,606,739 | 12,027 | ${ }_{\text {1,618,766 }}^{532,226}$ | \| $1,866,319$ |  | $\underset{\substack{10,222,235 \\ 6,331.483}}{\substack{\text { a }}}$ | $\underset{\substack{\text { che } \\ 3,150,234 \\ \hline 1,003}}{ }$ | 117,82235 66,064 83 |
| New Brunswick................... |  | , 300 | 25,886 | .... | 25,886 | 26,707 | ${ }^{409,828}$ | 183,527 | 226,291 | ${ }_{2,135} 37$ |
| Nova Scotia. | 5 | 950 | 56,647 |  | ${ }_{56,6+7}^{514}$ | ${ }^{60,356}$ | -961,643 |  | 26,450 14,920 | ${ }^{10,301}{ }^{103}$ |
| Prinee Edward Island...................... Manitoba.................................. | 3 3 3 | 600 <br> 325 | 14,773 | .-.......... | 14,773 | - 15,713 | 268,586 <br> 111,541 | 253,666 <br> 111,541 <br> 112 | 14,920 | 3,136 1,446 1 |
| British Columbia........... | 4 | 700 | 24,408 |  | 24,408 | 27,505 | ${ }_{425,927}$ | 171,080 | 254,847 | $\underset{2,410}{ } 80$ |
| Total. | 118 | 21,225 | 2,266,765 | 12,027 | $\underline{2,278,792}$ | 2,564,692 | 40,846,079 | 18,208,735 | 22,637,344 | 203,312 35 |
|  |  |  |  |  |  |  |  |  |  |  |
| Ontario ..................................... | ${ }^{86}$ | $\xrightarrow[\substack{15,725 \\ 235}]{ }$ | ${ }^{2,135,847}$ | 575 |  | ${ }^{2,517,542}$ | $39,7674,496$ <br> $10,183,980$ | $\xrightarrow{6,438,401} 4$ |  | 80,109 44,368 48 |
| Nuebec........... | $\stackrel{13}{2}$ | $\xrightarrow{2,350}$ |  | -.......... | 26,141 | ${ }_{27,375}^{612,225}$ | 10, 423,598 | $4,201,248$ <br> 2929 <br> 80 | ${ }^{\text {, }, 13811,579}$ |  |
| Nova Scotia............................... | 4 | 800 | 32,602 |  | 32,602 | ${ }^{35,723}$ | 548,375 | 548,375 |  | ${ }_{6}^{6,283} 7$ |
|  | 3 | 600 200 |  |  |  | 17,436 <br> $\substack{238}$ | 275,666 <br> 43,046 | 257,978 | 17,688 | 3,179 <br> 638 <br> 68 |
| British Columbia... | 5 | 800 | 29,099 |  | 29,099 | 33,580 | 505,096 | 315,830 | 189, 266 | ren 3,958 30 |
| Total.......................... | 114 | 20,775 | 2,811,166 | 575 | 2,811 741 | 3,216,264 | 51,747,618 | 12,097,858 | 39,649,760 | 141,753 58 |
| Inland Revenue Department, Ottawa, 31st July, 1876. |  |  |  |  |  |  |  | A. BRUNEL, Commissioner. |  |  |


|  | Placed in Warehouse. |  | Totals. | Revenue Divisions. | Ex-War Duty, 1 | house for nt per 1 lb . |  |  |  |  | Totals. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lbs. | Lbs. | Lbs. | Lbs. |  | Lbs. | \$ cts. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |
| 30,825 | 83,210 |  | 114,035 | .Belleville | 50,259 | 50259 |  |  |  | 63,776 | 114,035 |
| 103,205 | 417,260 640 | 23,220 | 544,225 | ....Cobourg .................. | 424,114 | 4,241 14 |  |  |  | 120,111 | 544,225 |
| 20,917 | 65,954 |  | 76,871 | ......Collingwood ............. | 58,384 | 58384 |  |  |  | 18,487 | 76,871 |
| 76,468 | 508,658 |  | 585,126 | Gode | 258,748 | 2,567 48 |  |  |  | 328,378 | 585,126 |
| 1,885,749 | $\left\{\begin{array}{c}6,180,179 \\ 77,932\end{array}\right\}$ |  | 8,143,860 | ......Guelph........ .............. | 1,668,801 | 16,688 01 | 101,674 | 4,750,409 |  | 1,622,976 | 8,143,860 |
| 498,706 | $\left\{\begin{array}{r}\text { 4,923,901 } \\ 9,291\end{array}\right\}$ | ... ....... | 5,431,898 | mi | 1,427,803 | 14,278 03 | 317,287 | 1,649,750 |  | 2,037,058 | 5,431,898 |
| 289,779 | 844,583 | ... ...... | 1,134,362 | Kingston | 270,780 | 2,707 80 |  | 184,890 |  | 678,692 | 1,131,362 |
| 1,373,704 | 6,987,096 |  | 7,360,800 | ......London ................... | 2,517,814 | 25,178 14 | 462,325 | .1,755,216 |  | 2,625,445 | 7,360,800 |
|  |  |  |  | ..Ottawa |  |  |  |  |  |  |  |
| 208,233 | 545,167 | 83,602 | 837,002 | .....Paris. | 324,428 | 3,244 28 |  | 25,200 |  | 487,374 | 837,002 |
| 245,875 | 198,745 | ...... ....... | 444,620 | ......Perth | 29,518 | 29518 |  |  |  | 415,102 | 444,620 |
| 57,367 | 414,427 |  | 471,794 | .....Peterborough............. | 321,506 | 3,215 06 |  |  |  | 150,288 | 471,794 |
| 408,501 | $\left\{\begin{array}{r}1,640,179 \\ 7,23\end{array}\right\}$ |  | 2,056,303 | ....Prescot | 1,023,738 | 10,237 38 | 224,383 | 455,720 |  | 352,463 | 2,056,303 |
| 360,242 | 911,355 10,853 |  | 1,282,450 | ...St. Cat | 416,555 | 4,165 55 | 59,602 | 367,063 | 3,272 | 435,953 | 1,282,450 |
| 11,533 | 47,641 |  | 59,174 | Sarnia | 35,351 | 35351 |  |  |  | 23,823 | , |
| 1,299,669 | $\left\{\begin{array}{r}7,868,022 \\ 22,528\end{array}\right\}$ | 493,579 | 9,683,798 | ......Toronto .................. | 4,333,913 | 43,339 13 | 68,574 | 315,250 |  | 4,966,061 | 9,673,198 |

MALT.
No. 7.-Malt Warehouse Return for the Year ended 30th June, 1876.-Continued.


APPENDIX A.-Continued.-MALT.
No. 8.-Comparative Statement of Malt Warehouse Returns for the Years, ended 30th June, 1875 and 1876.


## APPENDIX A.-Continued.-MALT LIQUOR.

No. 9.-Return of Malt Liquor manufactured for the Year ended 30th June, 1876.


## APPENDIX A.-Continued.-MALT LIQUOR.

No. 10.-Comparative Statement of Malt Liquor manufactured, for the Years ended 30th June, 1875 and 1876.


## A. BRUNEL, <br> Commissioner.

Inland Revenue Department,
Ottawa, 31st July, 1876.

APPENDIX A.-Continued.-TOBACCO.
No. 11.-Return of Manufactures


* Paid in 1874-75. $\dagger 1$ License of 1876-77.

Inland Revenue Department,
Ottawa, 31st July, 1876.
or the Year ended 30th June, 1876.

| Cigars. |  | Snuff. |  | Weight entered for Consumption ExManufactory and Duty collected thereon, including Licence Fees. |  | Weight entered for Warehouse, and Duty accruing thereon. |  | Total Weight Manufactured and Duty accruing. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Duty. | 莒 ${ }_{\text {¢ }}^{\text {¢ }}$ | Duty. | Weight. | Duty. | Weight. | Duty. | Weight. | Duts. |
| Lbs. | \$ cts. | Lbs. | \$ cts. | Lbs. | \$ cts. | Lbs. | \$ cts. | Lbs. |  |
| 1,658 | 66320 |  |  | 1,658 | 76320 |  |  | 1,658 | 76 |
| 6,123 | 2,449 20 |  |  | 6,123 | 2,724 20 | ............ |  | 6,123 | 2,724 20 |
| 15,679 | 6,271 60 |  |  | 48,792 | 13,:94 20 | 136,946 | 27,389 20 | 185,738 | 40,583 40 |
| 20,400 ${ }^{2}$ | 8,160 20 |  |  | 20,964 | 8,647 90 | 649,1692 | 130,008 90 | 670,133 ${ }^{\text {a }}$ | 138,656 80 |
| 3,155 | 1,262 00 |  | ... | 5,749 | 1,880 80, |  |  | 5,749 | 1,880 80 |
| 31,804 | 12,721 60 |  | . | 24,569 | 10,122 60 | 7,385 | 2,954 00 | 31,954 | 13,076 60 |
| 28,525, | 11,410 20 |  |  | 29,788 | 12,202 80 | 145,281 ${ }^{2}$ | 29,216 20 | 175,069 ${ }^{\text {\| }}$ | 41,419 00 |
| 2,837 | 1,134 80 |  | ..... ........ | 3,112 | 1,239 80 | 15, |  | 3,112 | 1,239 80 |
| 1,512 | ,604 80 |  |  | 1,512 | 65480 |  |  | 1,512 | 65480 |
| 8,558 | 3,423 20 |  |  | 8,558 | 3,573 20 |  |  | 8,558 | 3,573 20 |
| 87,075 | 34,830 00 ! |  |  | 89,677 | 32,231 60 | 138,595 | 31,637 86 | 228,272 | 63,869 40 |
| 14,632 ${ }^{4}$ | 5,853 14 |  |  | 76,4827 | 18,188 04 | 55,1031 | 11,227 25 | 131,586 | 29,415 29 |
| 221,959 ${ }^{\text {a }}$ | 88,783 94 |  |  | 316,984 $\frac{7}{8}$ | 105,423 14 | 1132,4808 | 232,433 35 | 1449,465 | 337,856 49 |
| 119,308 ${ }^{3}$ | 47,723 50 | 28,354 | 5,670 80 | 412,412 | 94,737 05 | 4112,792 | 834,59400 | 4525, 204 | 929,331 05 |
|  |  | 21,902 | 4,380 40 | 304,554 | 61,110 80 | 149,743 | 29,948 60 | 454,297 | 91,059 40 |
| 119,308 ${ }^{3}$ | 47,723 50 | 50,256 | 10,051 20 | 716,966 | 155,847 85 | 4262,535 | 864,542 60 | 4979,501 | 1020,390 45 |
| ........... |  |  |  |  | 5000 | 8,065 | 1,613 00 | 8,065 | 1,663 00 |
|  |  |  |  | 159,451 | 31,990 20 | 351,7781 | 70,355 70 | 511,2292 | 102,345 90 |
|  |  |  |  |  | 12500 | 115,724 | 23,144 80 | 115,724 | 23,269 80 |
| ........... | ............. |  |  | 159,451 | 32,115 20 | 467,502d | 93,500 50 | 626,953年 | 125,615 70 |
|  |  |  |  | 76,214 3,701 | $\begin{array}{cc} 15,342 & 80 \\ 840 & 30 \end{array}$ | $\begin{array}{r} 19,597 \\ 1.911 \end{array}$ | $\begin{array}{r} 3,90540 \\ 38220 \end{array}$ | $\begin{gathered} 95,741 \\ 6.6124 \end{gathered}$ | $\begin{array}{r} 19,24820 \\ 1.22250 \end{array}$ |
| ........... |  |  |  | 79,91512 | 16,183 10 | 21,488 | 4,287 60 | 101,353 $\frac{1}{2}$ | 20,470 70 |
| 3,0992 | 1,239 80 |  |  | 3,0991 | 1,439 80 |  |  | 3,0991 | 1,439 80 |
| 344,368 | 137,747 24 | Less Li | $10,05120$ <br> cense paid | $\begin{aligned} & 1,276,416 \frac{7}{2} \\ & 1 \text { in } 1874-75 \end{aligned}$ | $\left.\begin{array}{\|r\|} 311,05909 \\ \quad 5000 \\ 311,00909 \end{array} \right\rvert\,$ | $5892,020 \frac{6}{8}$ | 1196,377 05 | 7168,4372 | 1507,436 14 |

A. BRUNEL,

Commissioner.
APPENDIX A.-Continued.-TOBACCO.
No, 12.-Comparative Statement of Manufactures, for the Years ended 30th June, 1875 and 1876.

APPENDIX A.-Continued.-TOBACCO.
No. 12.-Comparative Statement of Manufactures, for the Years ended 30th June, 1875 and 1876.


APPENDIX A.-Continued.-TOBACCO WAREHOUSE ACCOUNT.
Dr.
No. 13.-Return for the

| Remaining in Warehouse from last year. |  |  | Placed in Warehouse. |  |  | Placed in Warehouse from other Divisiens. |  | Total <br> to be ac | Weigh counted | $\frac{h t s}{\mathrm{~d}} \text { for. }$ | Inland Revenue Divisions. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \mathscr{4} \\ & \underset{\circledR}{\circ} \end{aligned}$ |  |  |  |  |  |  |  | 桨 |  |
| Lbs. | Lbs. |  | Lbs. | Lbs. |  | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |  |
|  |  |  |  |  |  |  |  | $614+\frac{1}{2}$ |  |  | Algoma |
| $31667 \frac{1}{2}$ | ... |  |  |  |  | 35866 |  | $67533 \frac{1}{2}$ |  |  | Belleville |
| 3041 | ......... |  |  |  |  | 2335 $\frac{1}{2}$ | ........ | 5376 |  | ... | Oobourg ................. |
| 71.71 | ........ |  |  |  |  |  |  |  |  | ....... | Collingwood .. ........ |
| $714 \frac{1}{2}$ 4009 |  |  |  |  |  | 1614 |  | $2328 \frac{1}{2}$ | ..... |  | Cornwall............... |
| $\stackrel{4009}{138001}$ |  |  |  |  |  | 2030012 |  | 283099 |  |  | Goderich ............... |
| $13800 \frac{1}{2}$ |  |  | 136946 |  |  | 86326 |  | 237073 |  |  | Guelph................... |
| 241143 | $301 \frac{1}{2}$ |  | 648294t | 875 |  | 454546 |  | 1343984 | 11768 |  | Hamilton ..... ......... |
| 48560 | $839 \frac{1}{2}$ |  |  |  |  | 259 $669^{\prime}$ |  | 308429 | 839. | ...... | Kingston ........... .... |
| $50807 \frac{1}{2}$ | 2326 ? |  |  | -385 |  | 236195 |  | 287002 ${ }^{\frac{1}{2}}$ | 9711 $\frac{1}{2}$ | ...... | London ................ |
| 72347 | ........ |  |  |  | ... | $221574 \frac{1}{2}$ | ........ | 293923 |  |  | Ottawa .................. |
| $52676{ }^{2}$ |  |  | 144482 | 7991 |  | 88415 | .... | $285573 \frac{1}{2}$ | 7993 | .... | Paris....................... |
| $\begin{array}{r}280 \\ 638 \\ \hline\end{array}$ |  |  |  | ....... |  | 13:183 | .... | 13663 | .... | ........ | Perth.................... |
| 6387 |  |  |  |  |  | 15751 | .. ..... | $2: 138$ | ....... | ....... | Peterboro............... |
| 17869 |  |  |  |  |  | $19886{ }_{2}^{1}$ | ........' | 21673 |  |  | Prescott................. |
| 75592 |  |  |  |  |  | 24326 |  | 31885 | ........ | ........ | Sarnia .................. |
| 8311 |  |  |  |  |  | 163066 |  | $24617 \frac{1}{2}$ |  |  | St. Catharines........ |
| 3869121 ${ }^{1}$ | 6693 |  | 119001 | 19594 |  | 9550998 |  | 14562111 | 26287 |  | Toronto ................. |
| [1448 ${ }^{1958269}$ |  |  | 54070 | 14331 |  | 1 57414 |  | 61258ㄱ․ | 10331 |  | Windsor |
| 1958269 1626082 | 15301 | $51604 \frac{1}{2}$ | 4051577 | 60178 | 1037 | $152757 \frac{1}{2}$ |  | 6162603t | 75479 | $52641 \frac{1}{2}$ | Montreal................ |
| $\left\|\begin{array}{r}162608 \frac{1}{2} \\ 892\end{array}\right\|$ | ......... |  | 149743 <br> $\dagger 320$ |  |  | [130853 | ...... | 443524, | ........ |  | Quebec .................. |
| 892 |  |  |  |  |  |  |  | 2831 |  |  | Sherbrooke ............ |
| 295 636 |  |  |  |  |  | 27.12 | ... | 3016. |  |  | St. Johns................ |
| 636 25969 |  |  |  |  |  | 2475 |  | 3111 |  |  | Three Rivers. ......... |
| ${ }_{2}^{25969}$ |  |  | 8065 |  |  | $29145$ |  | 63179 |  |  | Miramichi, N.B........ |
| 32953172 |  |  |  |  |  | $\begin{array}{r} 51420 i \\ 51949 \end{array}$ |  | $8437321$ |  |  | St. John, do ...... |
| 2872542 |  |  | $351778 \frac{1}{2}$ |  |  | 559969 259 |  | 66816 9011612 | ... |  | Cape Breton, N.S..... <br> Halitax <br> do |
| 363701 |  |  | $\dagger 2161$ |  |  |  |  | 901162 | ... |  | Halifax, do.... |
| $36370{ }^{1}$ |  |  | 115724 |  |  | 18986 |  | $171080 \frac{1}{2}$ |  |  | Pictou, do .... |
| ${ }_{485138}^{11108}$ |  |  |  |  |  | 19316 |  | 30424 |  |  | Yarmouth, do.... |
| $48513 \frac{1}{2}$ |  | ... | $\begin{array}{r}19527 \\ +2208 \\ \hline\end{array}$ |  |  | 47567 |  | $117815 \frac{1}{2}$ | ....... |  | Charluttetown, P.E.I. |
|  |  |  | 11 |  |  | 47394 |  | 49305 |  |  | Summerside, do .. |
| 101573 <br> 1080 | 103 ${ }^{\frac{3}{4}}$ |  |  |  |  | 76268 | 1033 ${ }^{1}$ | $86419{ }^{\text {t }}$ | 11367 |  | Manitoba................ |
| 1080 241 |  |  |  |  |  | 302691 |  | 313492 |  |  | British Columbia..... |
| 241 |  |  |  |  |  |  |  | 241 |  |  | Sundry Collectors.... |
| $38185442$ | $\begin{array}{r} 25565 \\ \text { Les } \end{array}$ | $86384 \frac{1}{2}$ ss........ | 5805808 $\text { - } \dagger, 689$ | $\begin{aligned} & 89864.5 \\ & R e-W \end{aligned}$ | 1037 areho | 3849372 oused. | $1033 \frac{1}{8}$ | $13473724 \frac{1}{2}$ | $116463$ | $87421 \frac{1}{2}$ |  |

5801119

Inland Revenue Department, Ottawa, 31st July, 1876.

Year ended 30th June, 1876.
Cr.


## A. BRUNEL, <br> Commissioner.

APPENDIX A.-Continued.-TOBACCO WAREHOUSE ACCOUNT.

APPENDIX A.-Continued.-TOBACCO WAREHOUSE ACCOUNT.


## APPENDIX A.-Continued.-TOBACCO (RAW LEAF.)

Da
No. 15. -Return for the Year ended 30th June, 1876,


Comparative Statement for the Fiscal Years

| 21313 442890 | 61309 14294 | 1888127 ${ }^{7453732}$ | 23142 $124105 \frac{1}{2}$ | 25098 $39068 \frac{1}{2}$ | 46625 49402 | 1234538 1227332 | 131076 $187801 \frac{1}{2}$ | .........1875..................... |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Inland Revenue Department, Ottawa, 31st July, 1876.
and Comparative Statement for Years 1875 and 1876.
Cr.

ending 30th June, 1875 and 1876.


## APPENDIX A.-Continued.-PETROLEUM.

No. 16.-Return for the

| Inland Revenue Divisions. | $\begin{gathered} \text { Crude Oil } \\ \text { and } \\ \text { Distillate } \\ \text { used. } \end{gathered}$ | Tar and Residuam not dutiable. | Inicenses. |  | Petroleum, \&c. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Imperial Measurement. <br> Ontario. | Gallons. | Gallons. |  | \$ | Gallons. | \$ cts- |
| Hamilton .............................. |  |  | 1 | 50 | .... | ........0 |
| London.............. .................. | 7,254,056 | 133,976 | 6 | 300 | 3,659,842 | 219,590 52 |
| Paris...................... .............. | 5,664 |  | 1 | 50 | 2,577 | 15462 |
| Sarnia .................. ................ | 2,009,541 | ................... | 8 | 400 | 1,154,017 | 69,241 02 |
| Toronto ............................... | 26,040 | 11,551 | 2 | 100 | 19,956 ${ }_{\frac{1}{2}}$ | 1,197 39 |
|  | 9,295,301 | 145,527 | 18 | 900 | 4,836,392 ${ }^{2}$ | 290,183 55 |
| Montreal ....................... ........ | 122,600 | 117,206 | 1 | 50 | 1,823 | 10938 |
| Totals.................... | 9,417,901 | 262,733 | 19 | 950 | 4,838,215 | 290,292 93 |

## Inland Revenue Department,

Ottawa, 31st July, 1876.

Year ended 30th June, 1876.

| Inspection Fees. |  |  | Quantity Entered for Consumption Ex-Manufactory, and Duty collected thereon, including License and Inspection Fees. |  | Quantity entered for Warehouse, and Duty accruing thereon. |  | Total Quantity Manufactured, and Duty accruing thereon. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| At 10 cts. per Pkg. | At $\frac{1}{2} \mathrm{ct}$. per Gallon. | Fees. | Quantity. | Duty. | Quantity. | Duty. | Quantity. | Duty. |
| No. | Galls. | \$ cts.' | Gallons. | \$ cts. | Gallons. | \$ cts. | Gallons. | \$ cts. |
| 90,260 | 10,9982 | 9,080 99 | 2,844,787 | 180,068 21 | 815,055 | 48,903 30 | 3,659,842 | 228,971 51 |
|  |  |  |  | 5000 | 2,577 | 15462 | 2,577 | 20462 |
| 19,842 |  | 1,984 20 | 108,653 | 8,903 38 | 1,045,364 | 62,721 84 | 1,154,017 | 71,625 22 |
| 222 | 1,042 | 2743 | 9,788 ${ }^{2}$ | 71474 | 10,168 | 61008 | 19,956 ${ }^{2}$ | 1,324 82 |
| 110,324 | 12,0402 | 11,092 62 | 2,963,2283 | 189,786 33 | 1,873,164 | 112,389 84 | 4,836,392 ${ }^{2}$ | 302,176 17 |
| 51 | . | 510 | 1,823 | 16448 |  |  | 1,823 | 16448 |
| 110,375 | 12,040 $\frac{1}{2}$ | 11,097 72 | 2,965,051 $\frac{1}{2}$ | 189,950 81 | 1,873,164 | 112,389 84 | 4,838, $215 \frac{1}{2}$ | 302,340 65 |

A. BRUNEL,

Commissioner.

## APPENDIX A.-Continued.-PETROLEUM.

No. 17.-Comparative Statement for


Inland_Revenue Department, Ottawa, 31st July, 1876
the Years ended 30th June, 1875-76.

| Inspection Fees. |  |  | Quantity entered for Consumption Ex-Manufactory, and Duty collected ibereon, including License and Inspection Fees. |  | Quantity entered for Warehouse, and Duty accruing thereon. |  | Total Quantity Manufactured, and Duty accruing, includding Fees. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| At 10 cts. per Pkg. | At $\frac{1}{2} \mathrm{ct}$. per Gallon. | Fees. | Quantity. | Duty. | Quantity. | Duty. | Quantity. | Duty. |
| No. | Galls. | \$ cts. | Gallons. | $\$$ cts. | Gallons. | \$ cts. | Gallons. | \$ cts. |
| 99,035 | 8,728 | 9,947 14 | 3,089,769 ${ }^{2}$ | 165,785 63 | 1,688,699 | 84,434 95 | 4,778,468 $\frac{1}{2}$ | 250,220 58 |
| 1,521 |  | 15210 | 33,128 | 1,958 50 | .............. |  | 33,128 | 1,958 50 |
| 100,556 | 8,728 | 10,099 24 | 3,122,897 $\frac{1}{2}$ | 167,744 13 | 1,688,699 | 84,434 95 | 4,811,5962 | 252,179 08 |
| 110,324 | 12,040 $\frac{1}{2}$ | 11,092 62 | 2,963,228 ${ }^{\text {a }}$ | 189,786 33 | 1,873,164 | 112,389 84 | 4,836,392 $\frac{1}{2}$ | 302,176 17 |
| 51 |  | 510 | 1,823 | 16448 |  |  | 1,823 | 16448 |
| 110,375 | 12,040 $\frac{1}{2}$ | 11,097 72 | 2,965,051 $\frac{1}{2}$ | 189,950 81 | 1,873,164 | 112,389 84 | 4,838,2151 | 302,340 65 |

A. BRUNEL,<br>Commissioner.



Inland Revenue Department,
Ottawa, 31st July, 1876.

Page 74.-Remaining in Warehouse from last Year, read 9,212 instead of 11,056 gallons opposite Belleville; and total in same column, read 133,8581 $\frac{1}{2}$ instead of 135,7021.

Page 75.-Remaining in Warehouse, opposite Belleville read 9,212 instead of 11,056 gallons and total in same column, read 298,006 instead of 299,850 gallons.

Year ended 30th June, 1876.


APPENDIX A.-Continued.-PETROLEUM WAREHOUSE ACCOUNT.
Dr.
No. 19.-Comparative Statement for the


Inland Revenue Department, Ottawa, 31st July, 1876.

Years ended 30th June, 1875-76.
Or.


Total Excise Duty on Petroleum.

A. BRUNEL,

Commissioner.
APTENDIX A．－Continued．－MANUFACTURES IN BOND
No．20．－Return of Manufactures for the Year ended 30th June， 1876.

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APPENDIX A.-Continued.-MANUFACTURES IN BOND.
No. 21 - Comparative Statement of Manufactures for the Years ended June 30th, 1875 and 1876.

APPÉNDIX A.-Continued.-MANUFACTURES IN BOND.
No. 22.-Warehouse Return for the Year ended 30th June, 1876.

APPENDIX A.-Continued.-MANUFACTURES IN BOND


## CANALS.

APPENDIX A.-Continued.-CANALS.
No. 24.-General Statement showing the Quantity of each Article transported on the Welland Canal, and the


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| Articles. | $\underset{\substack{\text { Canadian to } \\ \text { Canadian } \\ \text { Ports. }}}{\text { Prom }}$ |  | From <br> Canalian to United States Purts. |  | FromUnited States toUnited States lorts. |  | From United States to Canadian Ports. |  | Tons. |  | Total Tons. | Amount of Tolls. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
| All other Goods and Merchandise not enumerated | 960 | 149 | 192 | 7 | 2,284 | 228 | 110 | 254 | 3,546 | 638 | 4,184 | $\begin{gathered} \$ \text { cts. } \\ 1,42763 \end{gathered}$ |
| Bark .i............. | 204 | 1 | 61 |  | 387 | 12 | 212 | 2 | 864 | 15 | 879 | 14017 |
| Boat Knees..... |  |  |  | 125 |  |  |  |  |  | 125 | 125 | 1250 |
| Floats. |  |  |  | 390 |  |  |  |  |  | 390 | 390 | 341 |
| Firewood, in Vessels................... | 3,063 | 52,905 |  | 495 | .......... | , |  | 9 | 3,063 | 53,409 | 56,472 | 2,697 32 |
| Firewood, in Rafts...................................... |  | 24 | B | ......... | ............ | 147 |  | ............. | ${ }_{5}$ | 171 | 176 | 4216 |
| Hop Poles ............................... |  |  |  |  |  |  |  |  |  |  |  |  |
| Lumber, Sawn, in Vessels ............ | 11,874 | 8,123 33 | 54 | 1.873 |  | 46,342 |  | 5,006 | 11,928 | 61,344 | 73,272 33 | 11,195 5 585 |
| Masts, Spars and Telegraph Poles, in Vessels. |  | 33 | 250 |  |  |  |  |  | 250 | 33 8 | 33 258 | 585 3808 |
| Masts, Spars and Telegraph Poles, |  |  |  |  |  |  |  |  |  |  |  |  |
| Railway Ties, in Vessels.. .............. do Rafts | 22 | 148 |  | 408 | -.......... | . | ............ | .......... | 22 | 556 | 578 | 7687 |
| Saw Logs ........................... ..... | 373 | 7,706 |  | 742 | ........... |  |  | 245 | 373 | 8,693 | 9,066 | 48277 |
| Staves and Headings, barrel......... |  | 191 | ...... .... | 137 | .......... | $125$ |  |  |  | 453 | 453 | 5610 |
|  |  | 582 |  | 570 |  | 949 |  | 3,732 |  | 5,833 | 5,833 | 1,092 20 |
| do West India.. |  | 48 | .......... |  |  |  |  | 874 |  | 922 | 922 | 17254 |
| Staves, Salt Barrel ................... |  |  |  | . | ...... .... | 177 |  |  |  | 177 | 177 | 2808 |
| Shingles................................ | 36 | 86 |  |  |  | 123 |  | 1 | 36 | 210 | 246 | 12708 |
| Split Post and Fence Rails, in Vessels | 90 | 2 |  |  | 8 |  |  |  | 98 | 2 | 100 | 797 |
| Split Posts and Fence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |
| Timber, Square, in Vessels ............ | 80 | 7,200 |  | 1,666 | \|.............. | 6,194 |  | 48,596 | 80 | 63,646 | 63,726 | 9,644 75 |
| do Rafts |  | 386 |  |  |  | 20 |  |  |  | 406 | 406 | 2752 |
| raverses..... ........................ |  |  |  |  |  |  |  |  |  |  |  |  |
| Woodenware and Wood partly manufactured....... .... ........... | 12 | 190 |  |  | 41 | 42 |  | 53 | 53 | 285 | 338 | 7550 |
| Total Freight paying Tolls | 28,001 | 121,696 | 41,860 | 9,862 | 274,543 | 242,152 | 10,923 | 368,161 | 355,327 | 741,871 | 1,097,198 | 189,813 19 |



40 Victoria. $\quad$ Sessional Papers (No. 4.)
No. 25.-General Statement showing the Quantity of each Article transported on the - St. Lawrence-Canals, and


No．26．－Generai Statement showing the Quantity of each Article transported，\＆c．－Gonlinued．

| Articles． | $\underset{\substack{\text { Cram } \\ \text { Canadian to } \\ \text { Oanadian } \\ \text { Ports. }}}{\text { and }}$ |  | From Canadian to Onited States Ports． |  | From United States to United States Ports． |  | From United States to Osnadian Ports． |  | Tons． |  | Total Tons． | Amonnt of Tolls． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up． | Down． | Up． | Down． | Up． | Down． | Up． | Down． | Up． | Down． |  |  |
| All other Goods and Merchandise |  |  |  |  |  | 1成碞 |  | 景： |  |  |  |  |
| not enumerated．．．．．．．．．．．．．．．．．．．．． | 8，782 | 2，654 | 372 | 80 | 322 | 598 | 854 | 72 | 10，330 | 3，404 | 13，734 | 2，301 40 |
| Barrels，Empty．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 611 | 126 | 23 | ．．．．．．．．．．．．． | 20 | 4 |  |  |  | 33 130 | 783 | 238 11068 |
| Boat Knees．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 51 |  |  |  |  | 4 |  |  | 51 |  | 51 | 101 |
| Floats．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  | 5，324 |  |  |  | ．．．．．．．．．． | ．．．．．．．．．． |  |  | 6，324 | 5，324 | 9317 |
| Firewood，in Vessels．．．．．．．．．．．．．．．．．． do di Rafts．．． | 2，442 | 69，966 | 360 | ．．．．．．．．．．．．． | 36 |  | ．．．．．．．．． |  | 2，838 | 69，966 | 72，804 | 2，381 60 |
|  |  |  |  |  |  |  |  |  |  | 10 | ${ }^{90}$ | 188 |
| Hop Poles．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 167 |  | 1，058 |  | 6 | 2 |  |  | 1，225 | 10 301 | ${ }^{16}$ | 210 |
| Lumber，sawn，in Vessels ．．．．．．．．．．．． | 9，732 | 38，540 |  | 10，855 |  | 719 |  | 708 |  | 45，822 | 66，554 | 80 80 3,77051 |
| do do Rafts ．．．．．．．．．．．．．． | 218 | 6，853 |  |  |  |  |  |  | 218 | 6，853 | 7，071 | 770 51 31805 |
| Masts，Spare and Telegraph Poles， |  |  |  |  |  |  |  |  |  |  |  |  |
|  | s0 |  |  |  |  |  |  |  | 50 |  | 50 | 063 |
| in kafts．．．．．．．．．．．．．．．．．．．．．．．．．．． | 40 | 15，220 |  |  |  |  |  |  | 40 | 15，220 | 15，260 |  |
| Railway Ties，in Vessels ．．．．．．．．．．．．．． |  | 438 |  | 99 |  |  |  |  |  | 537 | 537 | 1709 |
| do do Rafts．．．．． |  |  | ． |  |  | ．．．．．．． |  |  |  |  |  |  |
| Saw Logs ．．．．．．．．．．．．．．．．．． |  | 9，943 | ．．．．．．．．．．．．． | ．．．．．．．． |  |  | ． |  |  | 9，943 | 9，943 | 22719 |
| Staves and Headings，barrel ．．．．．．．． |  | 1，482 |  | ．． | 75 | ．．．．．．．．．． |  |  | 75 | 1，482 | 1，557 | 11909 |
| $\begin{array}{lll}\text { do do pipe ．．．．．．．．} \\ \text { do } \\ \text { do } & \text { West India．．}\end{array}$ |  | 2，112 |  |  |  |  |  |  |  | 2，112 | 2，112 | 23175 |
|  |  | 572 | ．． |  | ．．．．．．．．． |  | ．．．．．．．．．． |  |  | 572 | 572 | 7500 |
| Shingles．．．．．．．．．．．．．．．．．．．．．．．． | 34 | 2 | ．．． | ．．．．．．．．．．．．． | 7 | ．．．．．．．．．． | ．．．．．．．．．． |  | 41 | 2 | 43 | 35 |
| Split Posts and Fence Rails，in |  |  |  |  |  |  |  |  |  |  |  |  |
| Split Posts and Fence Rails，in |  | 5 |  |  |  |  |  |  |  | 5 | 5 | 060 |
| Rafts．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |  |  |  |  |  |  |  |
| Timber Square，in Vessels．．．．．．．．．．． | 50 | 1，824 |  | ．．．．．．．．．．．．．． |  |  |  |  | 50 | 1，824 | 1，874 |  |
| $\underset{\text { do }}{\text { do }}$（ ${ }^{\text {a }}$ | 40 | 17，792 |  |  |  |  |  |  | 40 | 17，792 | 17，832 | 49830 |
| Wraverses ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  | 11，709 |  |  |  |  |  |  |  | 11，709 | 11，709 | 3047 |
| Woodenware and Wood partly manufactured ．．．．．．．．．．．．．．．．．．．．．．．．． | 303 | 308 |  |  |  |  |  |  | 303 | 308 | 611 | 20000 |
| Total Freight paying Tolls．．． | 118，144 | 424，662 | 8，845 | 12，417 | 720 | 3，763 | 20，386 | 20，782 | 143，095 | 461，624 | 604，719 | 6，932 |



## APPENDIX A.-Continued.-CANALS.

No 26.-GEneral Statement showing the quantity of each Article transported on the Burlington Bay Canal, and


No. 26.-General Statement showing the Quantity of each Article transported, \&c.-Continued.

| Articles. | $\underset{\substack{\text { From } \\ \text { Canadian to } \\ \text { Canadian } \\ \text { Ports. }}}{\text { and }}$ |  | $\begin{aligned} & \text { From } \\ & \text { Canadian to } \\ & \text { United States } \\ & \text { Ports. } \end{aligned}$ |  | $\begin{aligned} & \text { From } \\ & \text { United States to } \\ & \text { United States } \\ & \text { Ports. } \end{aligned}$ |  | $\begin{gathered} \text { From } \\ \text { United States to } \\ \text { Conadian } \\ \text { Ports. } \end{gathered}$ |  | Tons. |  | ${ }_{\text {Tonal }}^{\text {Tonal }}$ | $\begin{gathered} \text { Amount } \\ \text { oflls. } \\ \text { Toll } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | णp. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | $\mathrm{u}_{1}$. | Down. |  |  |
| All other Goods and Merchandise not enumerated.......... ............. | 3,814 | 1,199 |  |  |  |  | 75 |  | 3,889 | 1,199 | 5,088 | \$ cts. |
| Bark | 8 | 2 |  |  |  | .......... |  |  | 8 | 2 | 10 | ............... |
| Boat Kneess........ |  |  |  |  |  |  |  |  |  | $\ldots$ |  | ..... |
| Fire Wood, in Veseesels................... | 615 | .............. | ....... | ............. | ........... | .. | ............. |  | ${ }^{615}$ | .... | ${ }_{6}^{615}$ |  |
| Hoopa | .......... | ............ | -........... | ............ |  |  |  |  |  |  | .............. |  |
| Lumber, zant in Vineselis | 906 | 129 |  | 1,624 |  |  | 105 |  | 1,011 | 1,753 | 2,764 |  |
| do do Rafta............... |  |  |  |  |  |  |  |  |  |  |  |  |
| Masts, Spars, and Telegraph Poles |  |  |  |  |  |  |  |  |  |  |  |  |
| Masts spars, and Telegraph Poles |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 21 |  |
| Railway Ties, in Veasels ............. |  | 100 |  |  |  |  |  |  |  | 100 | 100 |  |
| Saw Loga ................................ |  |  |  |  |  |  |  |  |  |  |  | ................... |
| Stares and Headings, Parree.......... |  |  |  |  |  | .......... | ......... |  | .... |  | -.......... |  |
| do do | .... | ............... | ............ | ................. | ............. | ............ | ........ |  | ............ | ................ | ............ |  |
| Staves, Salt Barrel $\qquad$ | ........... |  | ........... | -............... |  | $\cdots$ | +........... |  |  | .............. |  | .... |
| Split Posts and Fence Rails, in |  | 5 |  |  |  |  |  |  |  | \% | 5 |  |
| Split Posts and Fence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Timber, Square, in Veasels ... |  | $\begin{aligned} & 1,060 \\ & 9 \times 180 \end{aligned}$ |  | 55 |  |  |  |  |  | ${ }_{\substack{1,116 \\ 9 \\ \hline 184}}$ | 1,118 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

40
Victoria.

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40 Victoria. Sessional Papers (No. 4.)
A. 1877.
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No 27.-General Statement showing the Quantity of each Article transported, \&c.-Continued.


No. 28 -General Statement showing the Quantity of each Article transported on the Chambly Canal, and the





No．29．－General Statement showing the Quantity of each Article transported on the Rideau Canal，and the

|  |  |  |
| :---: | :---: | :---: |
|  |  |  |
| $\begin{gathered} \text { g. } \\ \stackrel{\rightharpoonup}{\circ} \end{gathered}$ | 最 |  |
|  | $\stackrel{\square}{\square}$ |  |
|  | $\stackrel{\text { E }}{\stackrel{\text { B }}{\circ}}$ |  |
|  | ถั่ |  |
|  | 容 |  |
|  | 官 |  |
|  | 号 |  |
|  | 官 |  |
|  | $\dot{8}$ |  |
|  | $\stackrel{\text { ® }}{\square}$ |  |
|  |  |  |


No. 29.-General Statement showing the Quantity of each Article transported, \&c.-Continued.

| Articles. |  |  | From Canadian to United States Ports. |  | From United States to United States Ports. |  | FromUnited States to Canadian Ports. |  | Tons. |  | Total Tons. | $\begin{gathered} \text { Amount } \\ \text { of } \\ \text { oolls. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathrm{UP}_{\mathrm{p}}$. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
|  |  | $\begin{array}{r} 463 \\ 26 \\ 32 \end{array}$ |  |  |  |  |  |  |  |  |  | $\$$ cts |
| All other Goods and Merchandise not enumerated | $\begin{array}{r} 635 \\ 91 \\ 65 \end{array}$ |  |  |  |  |  |  |  | 635 | 463 | 1,098 | 12691 |
|  |  |  | ...... |  |  |  |  |  | 91 | 26 | 117 | 296 |
| Barrels, Empty |  |  | ............. |  | ........... |  |  |  | 65 | 32 | 97 | 478 |
| Boat Knees <br> Floats |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | $\begin{array}{r} 3,711 \\ 17,016 \end{array}$ | ........... |  |  |  |  |  | ${ }^{74,868}$ |  |  |  |
| Floats <br> Firewood, in Vessels <br> do in Rafis. | 2,32074,868128 |  |  | ... |  |  |  | ...... | ${ }^{74,868} 12$ | 17,016 150 | $\begin{array}{r}91,884 \\ \hline 276\end{array}$ | 1,699 676 |
|  |  | $\begin{array}{r} 17,016 \\ 150 \end{array}$ |  |  | ... |  |  |  | 126 <br> 1 <br> 1 |  | ${ }^{2}$ | 028 |
| do in Rafis......................... Hoops..................................... | 128 <br> 1 <br> 1 |  |  |  |  |  |  |  | 793 | 9 | 802 | 6375 |
| Hoops.................................... | $\begin{array}{r} 793 \\ 8,3+9 \\ 96 \end{array}$ |  | . |  |  |  |  |  | 8,349 | 1,419 | 9,768 | 34426 |
| Lumber, Sawn, in Vessels.............. do do Rafts ............ |  | ........ |  |  |  |  |  |  | 96 |  |  |  |
| Masts, Spars, and Telegraph Poles, in Vessels Masts, Spars, and Telegraph Poles, in Rafts | 80 |  |  |  |  |  |  |  | 80 |  | 80 | 400 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 473 |  |  |  | ........... | . |  |  | 473 |  | 473 | 2950 |
| Railway Ties, in Vessels ............. Rafts .......... |  |  |  |  |  |  |  |  |  |  |  |  |
| Staves and Heading, Barrel <br> do do Pipe $\qquad$ $\qquad$ | 4,409 | 3,280 | - | . | - | .......... |  |  | 4,409 | 3,280 1,331 | 7,689 1,31 | 18159 4265 |
|  | ............ | 1,331 |  |  |  |  | .. |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 202 | 7 | ..... ..... | ........... |  | ............ |  |  | 202 | 7 | 209 | 6429 |
| Shingles <br> Split Posts and Fence Rails, in Vessels |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 71 | 2 |  |  |  |  |  |  | 7 | 2 | 7 | 1111 |
| Split Posts and Fence Rails, in Rafts. |  |  |  |  |  |  |  |  | 1 |  |  |  |
|  | 1 |  |  |  |  | .......... |  |  |  | 12 | 12 | 038 |
| Timber, Square, in Vessels ........... <br> do <br> Rafts. | 340 | 129 | ....... ... |  |  |  |  |  | 340 | 129 | 469 | 969 |
|  | 780 | 5,440 |  |  |  | .......... |  |  | 780 | 8,440 | 6,220 | 7288 |
| Woodenware and Wood partly manufactured |  | 16 |  |  |  |  |  |  | 49 | 16 | 65 | 960 |
|  |  |  |  |  |  |  |  |  | 106,108 | 41,058 | 147,166 | 3,936 18 |



## APPENDIX A.-Continued.-CANALS.

No. 30.-General Statement showing the Quantity of each Article transported on the St. Peter's Canal, and the

APPENDIX A.-Continued.-CANALS.
No. 31.-General Seatement showing the Quantity of each Article transported on the Newcastle District


No. 32.--Statement of Traffic on the undermentioned Canals, and the

| Articles. | Welland Canal. |  | St. Lawrence Canals. |  | Chambly Canal. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
| Class No. 1. |  | $\$$ cts. |  | \$ cts. |  | 5 cts |
| Canadian Vessels, steam..... | 127,187 | 2,813 03 | 398,490 | 5,099 43 | 66,066 | 31022 |
| United States Vessels, steam | 95,482 | 2,363 54 | 20,831 | 22631 | 392 | 584 |
| Canadian Vessels, sail........ | 459,081 | 9,074 93 | 772,769 | $8,11587$. | 62,168 | 96563 |
| United States Vessels, sail.. | 396,054 | 8,815 56 | 118,152 | 1,196 51 | 113,105 | 1,528 93 |
| Total, Class No. 1.... ... | 1,077,804 | 23,067 06 | 1,310,242 | 14,638 12 | 241,731 | 2,810 62 |
| Passengers ...... | No. 5,735 | 18643 | $\begin{aligned} & \text { No. } \\ & 40,381 \end{aligned}$ | 2,408 66 | No. $5,479$ | 9229 |
|  | Tons. |  | Tons. |  | Tons. |  |
| Bricks ........ | 472 | 5783 | 5,491 | 28546 | 564 | 3945 |
| Cement and Water Lime.... | 293 | 5490 | 3,253 | 53772 | 20 | 200 |
| Clay, Lime and Sand......... | 1,024 | 191,81 | 5,245 | 23293 | 3,406 | 33406 |
| Coal................................ | 32s,403 | 63,512 87 | 23,216 | 2,977 65 | 118,822 | 11,824 74 |
| Fish. | 68 | 576 | 1,824 | 22170 |  | 010 |
| Gypsum ......................... | 2,046 | 12981 | 2,290 | 9950 | 218 | 728 |
| Iron, Railway ... ............... | 1,523 | 30460 | 31,929 | 3,967 25 | 2,352 | 23520 |
| do Pig .......... ..... ....... | 2,505 | 43376 | 17,230 | 1,927 67 |  | . ........ |
| do all other........... ..... | 4,887 | 91541 | 8,814 | 1,035 37 | 746 | 7311 |
| Salt ............................... | 17,437 | 3,475 51 | 6,588 | 80.480 | 944 | 8091 |
| Stone, for cutting .... ........ | 5,803 | 1,159 83 | 4,827 | 23230 | 3,969 | 38528 |
| Apples................... ........ | 2,990 | 28779 | 8,090 | 1,201 38 | 939 | 9390 |
| Barley ........................... | 37,057 | 7,320 80 | 6,847 | 46989 | 3,736 | 34427 |
| Corn .............................. | 119,506 | 23,852 30 | 15,655 | 1,894 54 |  |  |
| Cotton, Raw ................... |  |  |  |  |  |  |
| Flax and Hemp ........ ....... | 3 | 060 | 54 | 293 | ...... | .... |
| Flour .......................... | 15,759 | 1,242 72 | 23,971 | 3,423 25 | 322 | 1190 |
| Hay, Pressed............. ...... | 266 | 4663 | 1,044 | 8262 | 663 | 5309 |
| Meals, all kinds............... | 1,155 | 19275 | 840 | 8290 | 70 | 234 |
| Oil Oake .........................! | 1, 3 | 060 | 8 | 065 |  |  |
| Oats. | 14,553 | 2,889 13 | 10,375 | 71098 | 2,651 | 20796 |
| Pease ........................... | 2,303 | 46060 | 24,281 | 2,346 20 | 921 | 3447 |
| Potatues | 26 | 083 | 522 | 3163 | 3 | 020 |
| Rye . ............................. | 643 | 12860 | 3 | 034 |  |  |
| Seeds, all kinds................ | 41 \| | 820 | 114 | 967 |  | ... ....... |
| Tobacco, Raw................. | 12 | 240 | 27 | 281 | 17 | 170 |
| Wheat.......................... | 261,030 | 50,326 09 | 138,603 | 17,461 94 | ........ |  |
| All other Agricultural Products, Vegetable............. | 560 | 8650 | 1,330 | 13980 | 684 | 2346 |
| Bones............................. | 120 | 2400 | 1,401 | 19707 | 82 | 820 |
| Cattle.... ......................... | 7 | 138 | 773 | 5172 | 83 | 282 |
| Hogs. . .......................... |  |  | 65 | 582 |  |  |
| Hides and Skins, Horns andHoofs...................Horses.................. |  |  |  |  |  |  |
|  | 105 | 2100 | 182 | 1996 | 42 | 420 |
|  | 44 | 877 | 316 | 2551 | 13 | 045 |
| Lard and Lard Oil.... ........ | 26 | 345 | 116 | 1454 |  |  |
| Meats, other than Pork...... | 18 | 360 | 148 | 2071 | 5 | 050 |
| Pork............. ................. | 296 | 5913 | 614 | 5357 | 1 | 004 |
| Sheep............................ | 1 | 020 | 379 | 2537 | 308 | 1045 |
| Tallow. ......................... | 10 | 200 | 23 | 260 | 4 | 040 |
| Wool............................. | 31 | 620 | 100 | 1388 |  |  |
| All other Agricultural Products, Anima. | 13 | 420 | 2,497 | 24201 | 196 | 667 |
| Total, Class No. 3.. ..... | 821,039 | 157,222 56 | 348,085 | 40,856 64 | 141,782 | 13,789 15 |

## A.-Continued.

Amount of Tolls collected during the Fiscal Year ended 30th June, 1876.

| Burlington Bay |  | Ottawa Canals. |  | Rideau Canal. |  | St. Peter's Canal. |  | Newcastle District Canals. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
|  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |
| 164,951 | 3,299 02 | 62,340 | 42285 | 43,581 | 51746 |  |  | 3,780 | 4200 |
| ..... 65,550 | 655 ¢6.... | 167,834 | 2,232 81. | 133,243 | r $\begin{array}{r}05 \\ 1,14778\end{array}$ | 25,502 | 51004 | 900 | 450 |
| 5,908 | 5908 | 70,590 | 1,357 61 | 7,047 | 6296 |  |  |  |  |
| 236,415 | 4,013 66 | 300,764 | 4,013 27 | 183,883 | 1,728 70 | 25,502 | 51004 | 4,680 | 4650 |
| No. <br> 14,327 |  | No. 32,328 | 23630 | No. 1,906 | 4980 | No. ${ }_{71}$ |  |  |  |
| Tons. |  | Tons. |  | Tons. |  | Tons. |  | Tons. |  |
| 138 | ............ | 115 | 290 | 644 | 1960 | ........... | . |  |  |
| 111 | ..... ....... | 45 | 368 | 187 | 771 | ........... | ........... | .... ..... |  |
| 1,340 33,565 | ............. | 1,759 | 11264 | 484 | 1301 15216 |  | 48 | ..... |  |
| 33,565 243 | .................. | 44 | 132 | 3,229 387 | 1045 | 1,588 | 1588 |  |  |
| 1 | .............. | 28 | 260 | 248 | 1088 | 1,588 |  | ........ |  |
| 6,119 |  | 20 | 123 |  |  |  |  |  |  |
| 7,506 | . | 78 | 627 | 159 | 399 | . | .......... |  |  |
| 2,743 | ............. | 323 | 1473 | 934 | 2926 | ............ |  |  |  |
| 262 | .............. | 49 | 179 | 681 | 1999 | ............ | ........... | .... .... |  |
| 1,766 | ........ ...... | 2,548 | 19926 | 70 | 175 | ........... |  |  |  |
| 1,210 | ............. | 19 | 073 | 4 | 020 | ........... |  |  |  |
| 4,983 | .............. | 401 | 1767 | 144 | 362 | .......... . | ........... |  |  |
| .............. | ...... ....... | 1 | 007 | 46 | 166 | .......... . | ........... | ......... |  |
| $\cdots$ | .............. | .. | . | ...... |  | ........... | ......... |  |  |
| 3,656 | ............. | 126 | 451 | 349 | 1131 | 867 | 867 |  |  |
| 24 | .............. | 1 | 005 |  |  | ……... |  |  |  |
| 24 | .............. | 529 | 4470 | 521 | 2610 | ........... | ..... |  |  |
|  | ............. | 329 | 2239 | 692 | 005 6388 | ......... | .......... |  |  |
| 5,624 | ......... | 2,071 | 14323 | 13 | 035 | ............. | ............ |  |  |
| 10 | \|.............. | 146 | 996 | 11 | 031 | . |  |  |  |
| 42 | - |  |  | 125 | 318 | ..... | .......... |  |  |
| 42 | .............. | 6 | 034 | 5 | 025 | ........... | .......... |  |  |
| 12,725 | ................... | $\dddot{7}$ | 050 | 149 | 791 | ...... | .......... |  |  |
| 13 | ......... .... | 53 | 222 | 3 | 020 | . | ........... | ......... |  |
| 5 |  | 38 | 342 | 60 | 235 | ... | ......... | ......... |  |
| 2 | . | 403 | 2695 | 3 | 009 | ........ | ........ | . |  |
| .............. |  | 49 | 338 | 1 | 003 | . | ........... |  |  |
| 30 |  | 42 | 346 | 34 | 104 |  |  |  |  |
| 40 |  | 180 | 776 | 5 | 018 |  |  |  |  |
| 15 |  | 5 | 044 | 19 | 053 | ..... |  |  |  |
| 6 | .. ... ... | 6 | 041 | 1 | 005 | ........... |  |  |  |
| 82 | ... | 55 | 254 | 37 | 138 | ...... |  |  |  |
| .............. |  | 176 | -12 11 | 1 | 003 | . |  |  |  |
| -............. |  | 6 | 050 | 4 | 010 | . | ......... | ......... |  |
| 19 | .............. | 1 | 007 | 92 | 255 |  |  |  |  |
| 97 |  | 348 | 2639 | 1,043 | 7409 | 7,755 | 660 |  |  |
| 82,400 |  | 10,007 | 68022 | 10,387 | 47021 | 7,755 | 7755 | \|..... |  |

No. 32.-Statement of Traffic on the


Sessional Papers (No. 4.)
undermentioned Canals, \&c.-Continued.


No. 32.-Statement of Traffic on the


Inland Revenue Department, Ottawa, 31st July, 1876.

## undermentioned Canals, \&c.-Continued.



A. BRUNEL,<br>Commissioner.

No. 33.-Summary Statement of Traffic on the undermentioned Canals, of each description of Property passing through


## A.-Continued

during the Fiscal Year ended 30th June, 1876, showing the total Quantity and the Amount of Tolls collected thereon.

| Burlington Bay Canal. |  | Ottawa Canals. |  | Ridean Cadal. |  | St. Peter's Canal. |  | Newcastle District Canals. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
|  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  |  |
| 236,415 | 4,013 66 | 300,764 | 4,013 27 | 183,883 | 1,728 70 | 25,502 | 51004 | 4,680 | 4650 |
| $\begin{gathered} \text { No. } \\ \text { 14,327 } \end{gathered}$ |  | $\begin{gathered} \text { No. } \\ \mathbf{3 2 , 3 2 8} \end{gathered}$ | 23630 | $\underset{1,906}{\text { No. }}$ | 4980 | No. | . | No. |  |
| Tons. |  | Tons. |  | Tons. |  | Tons. |  | Tons. |  |
| 615 | $\cdot$ | 2,359 | 2115 | 6,031 | 20975 | ..... | ........... |  |  |
| 615 | ..... | 133,626 2 | 4,361 53 020 | 92,160 805 | 1,70541 64 34 | ........... | ..... ....... | 945 | 1575 |
| 2,764 | ................ | 284, 235 | 24,946 64 | 9,864 | 34841 | 1,220 | 1220 | 3,972 | 2321 |
| 621 |  | .............. | ............ .... | 80 | 400 | ........ | ........... |  | ......... |
| 100 | ……....... | 8,013 | 25718 | 473 | 2950 | ... | ........... | 132 | 538 |
| ................... | ................. | ${ }_{568}$ | 5730 | 7,689 | 18159 4265 | .............. | ........... |  | 200 |
| .............. | .............. | 186 | 4301 | 209 | 6429 | ...... | ............ | 48 | 435 |
| ${ }^{5}$ |  | 22 | 341 | 74 | 1124 | ...... | . | 10 | 050 |
| 10,299 | .............. | 2,160 | 2751 | 481 | 1007 | ............ | ........... | 150 | 150 |
| ........... | .............. | 285 | 055 | 6,220 | 7288 | ........... | ........... | 52 | 065 |
| 14,404 | .............. | 428,455 | 29,718 49 | 125,534 | 2,746 76 | 1,220 | 1220 | 5,316 | 5334 |
| 2 | ............. | 403 | 2695 | 3 | 009 | ............ |  |  |  |
| 40 | .............. | 49 | 338 | 1 | 003 | ........... | ........... | ......... |  |
|  |  |  |  |  | 003 | ........... | ........... | ........ | ....... |
| 42 | .............. | 808 | 5020 | 10 | 033 | ........... | .......... | ........ |  |
| 5 | ............... | 38 | 342 | 60 | 235 | ........... |  | ......... |  |
| 30 |  | 42 | 346 | 341 | 104 | .... | ... |  |  |
| 15 | .............. | 5 | 044 | 19 | ${ }^{1} 53$ | ......... | ........ | ........ | ........ |
| 6 | .... | 6 | 041 | 1 | 005 | .......... | . | ........ | ........ |
| 82 | .... | 55 | - 254 | 37 | 136 | $\cdot$ | .......... |  |  |
| $\cdots$ |  | 6 1 | $\begin{array}{ll}0 & 50 \\ 0 & 07\end{array}$ | 92 | 255 |  |  |  |  |
| 97 |  | 348 | 2639 | 1,043 | 7409 | 660 | 660 |  |  |
| 254 |  | 501 | 3723 | 1,290 | 8207 | 660 | 660 |  |  |

No. 33.-Summary Statement of Traffic on

the undermentioned Canals, \&c.-Continued.

| Burlington Bay Canal. |  | Ottawa Canals. |  | Rideau Canal. |  | St. Peter's Canal. |  | Newcastle District Canals. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
|  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |
| 13 | .............. | 53 | 222 | 3 | 2000 | ...... .... | ... |  |  |
| 1,210 | $\cdots$ | 19 | 073 | 4 | 020 | ........... | ....... |  |  |
| 4,983 | .. | 401 | 1767 | 144 | 362 | ........... | ........ |  |  |
| -................... | .................. | .............. | 007 | 46 | 166 | …….. | ........... |  | ........... |
| $\cdots{ }^{\mathbf{3}, \ldots \ldots 6}$ | ................. | 126 | 451 | 349 | 1131 | 867 | 867 | . |  |
| -............. |  | 1 | 005 |  |  |  | ........... |  |  |
| 11 | .............. | 529 | 4470 025 | ${ }^{621}$ | 2619 | ............ | ..... ..... |  |  |
|  | ............ . | 329 | 2239 | 692 | 6388 |  | ........ |  |  |
| 5,624 | .............. | 2,071 | 14323 | 13 | 035 | ........... | . |  |  |
| 10 | .............. | 146 | 996 | 11 | 031 |  |  |  |  |
| -............. | .............. |  |  | 125 | 318 | ....... | ... |  |  |
| 42 |  | 6 | 034 | 5 | 025 |  |  |  |  |
| 12,725 | ……....... | 7 | 050 | 149 |  |  |  |  |  |
|  | ....... |  |  |  | 1 | ......... | .......... | . | ...... |
| 28,321 | . | 3,694 | 24662 | 2,083 | 12171 | 867 | 867 |  |  |
| 1,417 | .............. | 116 | 1873 | 44 | 981 |  |  |  |  |
| 135 | ..............' | 17 | 194 | 91 | 1367 | ........... | .......... |  |  |
| 138 | ................. | 165 | 1098 290 | 97 644 | 478 1960 | .. | ....... | . |  |
| 104 | ............. | 144 | 823 | 51 | 589 | ........... | .............. |  |  |
| 111 | .............. | 45 | 368 | 187 | 771 | .............. | ............... |  |  |
| 28 | ... | 20 | 100 | 16 | 230 | ......... | ........... |  |  |
| 360 | ... | 8 | 068 | 46 | 582 | ............ | ........... |  |  |
| 23 | \|.............. | 32 | 380 | 43 \| | 496 | ............. | ........... | . |  |
| 257 |  |  |  | 34 | 301 | ..... ..... |  |  |  |
| 495 | .............. | 12 | 110 | 13 | 204 | \|........... | ......... |  |  |
| 6,119 | ……....... | 20 | 123 |  |  | ........... |  | . |  |
| 7,506 | .. ..... ...... | 78 | 627 | 159 | 399 | ......... | ........ | ......... |  |
| 2,743 | .... | 323 | 1473 | 934 | 2926 | ......... | ........ |  |  |
| , 327 | \|........ .....| | 2 | 035 | 54 | 479 |  |  |  |  |
| 1,448 152 | .............. | 16 | 105 | 173 | 1607 | ..... |  |  |  |
| 152 |  | 14 | 070 | 112 | 1268 | . | . |  |  |
| -.............. | \|-............. |  |  | ${ }_{11}^{2}$ | 005 0 0 | ........ | . |  |  |
| $\begin{array}{r}9 \\ \\ \\ \hline\end{array}$ | \|................. | 17 | 236 | 4 | 036 | …… $\cdot .$. | $\cdots$ |  |  |
| 185 |  |  |  | 5 | 045 | ....... |  |  |  |
| 347 | .............. |  |  | 18 | 159 |  | .... |  |  |
| 89 | .............. | 24 | 125 | 125 | 1230 | ...... | ..... |  |  |
| 77 | ...... ........ |  |  | 1 | 009 | ........ | ..... |  |  |
| 1,214 | ........ ..... | 49 | 348 | 441 | 4059 | ........... | ... ...... |  |  |
| 259 |  |  |  | 27 | 244 |  |  |  |  |
| 26 |  |  |  |  |  |  |  |  |  |
| 305 |  |  |  | 14 | 188 | .......... | ........... |  |  |
| 45 25 |  |  |  | 1 | 0 0 0 |  |  | ......... |  |
| 25 | ..... ........ | 3 | 070 | 6 65 | 053 960 |  |  |  |  |
| -m........... | ........ |  | 070 |  |  |  |  | -... |  |
| 24,047 |  | 1,220 | 9446 | 3,418 | 21732 |  |  | ......... |  |

No. 33.-Summary Statement of Traffic on


Inland Revenur Department,
Ottawa, 31st July, 1876.
the undermentioned Canals, \&c.-Gontinued.

| Burlington BayCanal. |  | Ottawa Canals. |  | Rideau Canals. |  | St. Peter's Canal. |  | Newcastle Districts Canals. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
| \$ | cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |
| 77 |  | 276 | 2043 | 9 | 099 | ........ | ..... | ............ |  |
| 1,340 | .- | 1,759 | 11264 | 484 | 1301 |  | 10 | ........ | ....... |
| 33,565 | ............. | .......... | .............. | 3,229 | 15215 | 4,640 | 4640 | ......... |  |
| 19 | . | ....... | ........ | 1 | 018 | .............. |  | ......... |  |
| 243 1 | .............. | 44 | 132 | 387 | 1045 | 1,588 | 1588 | .... |  |
| 1 | .............. | 28 205 | 1 10 10 | 248 8,589 | 1088 42945 | .......... | .......... | -........ |  |
| 86 | .................. |  |  | $\begin{array}{r}8,689 \\ \hline 6\end{array}$ | 053 | ........... | . | . |  |
| 49 262 | .............. | 2 | 028 | 6 | 072 | ........ |  |  |  |
| 262 1,773 | ............. | 49 | 179 | 681 | 1999 | ........ | ........ |  |  |
| 1,773 | .............. | 2,552 | 19946 | 93 | 273 | ...... | ... |  |  |
| 5,C88 | ........ ...... | 705 | 5161 | 1,098 | 12691 | 5,51I | 5511 |  |  |
| 42,503 | ............. | 5,620 | 40038 | 14,831 | 76799 | 11,739 | 11739 |  |  |
| 109,571 | 4,018 66 | 440,298 | 34,796 96 | 147,166 | 3,936 18 | 14,488 | 65490 | 5,316 | 9984 |

A. BRUNEL,<br>Commissioner.

APPENDIX A.-Continued.

| Canals and Offices. | 1875. |  |  |  |  |  | 1876. |  |  | Totals. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | July. | August. | Sept. | Oct. | Nov. | Dec. | April. | May. | June. |  |
| Welland Canal. |  | \$ cts. | \$ cts. | \$ cta. | \$ cts. | \$ cts. | \$ ets. | \$ cts. | \$ cts. | \$ cts. |
| Chippawa........................................ | \|r $\begin{array}{r}169 \\ 21,79637\end{array}$ | $\begin{array}{r}39 \\ \hline 28 \\ \hline 608 \\ \hline 18\end{array}$ | $\text { \|rr } \begin{array}{r} 328 \\ 18,91411 \end{array}$ | $\left\lvert\, \begin{array}{r} 1390 \\ 18,00833 \end{array}\right.$ | 14,778 $\begin{array}{r}606 \\ 93\end{array}$ |  |  | $\begin{array}{r} 1249 \\ 15,53168 \end{array}$ | 417022,04066 | 11954136,72197 |
| Dobborne............................................................. |  |  |  |  |  | 32082 2768 |  |  |  |  |
| Dunnville................................................... |  | 23,60898 10,344 123 | 82 02 <br> 5349  <br> 184  | [16606 | 14,778 93 |  | 3,722 127 | 11750 | -125 31 |  |
| Maitland. | 51564 154 | 121 <br> 121 <br> 1 |  |  | 24191 9296 | \|l|l|l|2677 <br> 4027 <br> 071 | 4893 93 73 | 2284642452 | 77301301 | 95414 92250 |
| Robinson......... | 3198319847 | 2285722603 | 2886514360 | 3936517171 | 29969 |  | 20039 |  |  | 2,496 58 |
| St. Catharines... |  |  |  |  | 11142 | 671 | 8334 | 22852 | 29137 | 1,461 17 |
| Total, Welland Cana | 31,642 49 | 34.69015 | 28,993 14 | 31,880 99 | 22,562 07 | 42225 | 5,796 02 | 23,105 65 | 33,973 92 | 213,066 68 |
| St. Lawrence Canals. |  |  |  |  |  |  |  |  |  |  |
| Reauharnois.............. ...................... | $\begin{array}{r} 21979 \\ 3,87265 \\ 8216 \\ 2,30701 \\ 68761 \\ 4,95111 \end{array}$ | $\begin{array}{r} 51733 \\ 2,81108 \\ 6251 \\ 2,17675 \\ 48240 \\ 4,24525 \end{array}$ | $\begin{array}{r} 77516 \\ 2,65922 \\ 7357 \\ 1,48363 \\ 32786 \end{array}$ | $\begin{array}{r} 59181 \\ 3,55142 \\ 2717 \\ 2,55684 \\ 42638 \\ 4,234 \quad 50 \end{array}$ | $\begin{array}{r} 31829 \\ 2,52177 \\ 6210 \\ 93778 \\ 18992 \\ 2,79729 \end{array}$ |  |  | $\begin{array}{r} 29034 \\ 2,75746 \\ 11204 \\ 4,31671 \\ 39908 \\ 2,94630 \end{array}$ | $\begin{array}{r} 36076 \\ 3,48853 \\ 6413 \\ 3,06966 \\ 35610 \\ 6,15913 \end{array}$ | $\begin{array}{r} 3,07348 \\ 21,76213 \\ 48368 \\ 16,84838 \\ 2,86935 \\ 28,94273 \end{array}$ |
| Cornwall......... ........................... ... |  |  |  |  |  | ....... | ............. |  |  |  |
| Einwardsburg.................................... |  |  |  |  |  | .............. | ............. |  |  |  |
| Kingston ......................................................... |  |  |  |  |  |  | ............. |  |  |  |
| Montreal...... |  |  |  |  |  |  |  |  |  |  |
| Total, St. Law ence Canals. ............ | 12,12033 | 10,295 32 | 8,928 59 | 11,388 12 | 6,827 15 | .............. | ............. | 10,921 93 | 13,498 31 | 73,979 75 |
| Chambly Canal. |  |  |  |  |  |  |  |  |  |  |
| Chambly,....... .......... ........................ | $\begin{array}{r} 1,47432 \\ 2,51775 \\ 9443 \end{array}$ | $\begin{aligned} & 1,07881 \\ & 2,80308 \\ & 11539 \end{aligned}$ | $\begin{array}{r} 50451 \\ 3,09177 \\ 7717 \end{array}$ | $\begin{array}{r} 85238 \\ 1,99140 \\ 9106 \end{array}$ | $\begin{array}{r} 512 \\ 1,681 \\ 1,63 \\ 85 \end{array} 01$ | ............. |  | 382 <br> 2,965 <br> 98 <br> 4120 | $\begin{array}{r} 1,65494 \\ 6543 \end{array}$ | $\begin{array}{rr} 5,322 & 21 \\ 16,706 & 02 \end{array}$ |
| St. John's........................................ |  |  |  |  |  |  | ... |  |  |  |
| Total, Chambly Canal .................... | $4,08650$ | 3,997 28 | 3,673 45 | 2,934 84 | 2,279 34 |  | $\qquad$ | 3,389 43 | 2,237 08 | 22,597 92 |


APPENDIX A.-Continued.
No. 35.-Statement showing the Number, Tonnage and Nationality of Vessels passed through all the Canals during the Fiscal Year ended 30th June, 1876, and the Tolls collected thereon.

| Vessels. | $\begin{array}{\|c} \text { Total } \\ \text { Numbr } \end{array}$ | $\underset{\substack{\text { From } \\ \text { Canadian to } \\ \text { Canadian } \\ \text { Ports. }}}{ }$ |  | $\begin{aligned} & \text { From } \\ & \text { Canadian to } \\ & \text { United States } \\ & \text { Porta. } \end{aligned}$ |  | FromUnited States toUnited StatesPorts. |  | $\begin{gathered} \text { From } \\ \text { United States to } \\ \text { Canadian } \\ \text { Ports. } \end{gathered}$ |  | Ton |  | $\begin{aligned} & \text { Total } \\ & \text { Tons. } \end{aligned}$ | Amount ofTolls. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Up. | Down. | Up. | Down. | Up. | Down. | $\mathrm{Op}_{\mathrm{p}}$. | Down. | Up. | Down. |  |  |
| Welland Canal. Canadian Vessel, steany | $\begin{array}{r} 5758 \\ 2,188 \end{array}$ | $\begin{aligned} & 47,2400^{4} \\ & 98,6881 \end{aligned}$ | $\begin{aligned} & 29,252 \\ & 66,711 \end{aligned}$ | $\begin{array}{\|} 14,940 \\ 120,906 \end{array}$ | 8,040 |  | .......... | $\begin{array}{r} 451 \\ 10,551 \end{array}$ | $\begin{gathered} 355,2481 \\ 154,192] \end{gathered}$ | $\begin{gathered} 62,631 \\ 230,138 \end{gathered}$ | $\begin{gathered} 64,5566 \\ 228,943 \end{gathered}$ | 127,187\% | $\begin{gathered} \$, 813 \\ 9,013 \\ 9,074 \\ 903 \end{gathered}$ |
| otal, Canadian | 2,786 | 145,921 | 95,963 | 135,846 | 8,096 |  |  | 11,002 | 189,440 | 292,769 | 293 | 586,2 | 11,887 96 |
| United States Vessels, <br> United States Vessels, sail | $\begin{array}{r} 319 \\ 1,428 \end{array}$ | $407$ | $\begin{array}{r} 62 \\ 1,239 \end{array}$ | $\begin{array}{r} 164 \\ 9,580 \end{array}$ | $\begin{array}{r} 436 \\ 1,721 \end{array}$ | $\begin{gathered} 47,149 \\ 184,212 \end{gathered}$ | $\begin{gathered} 42,230 \\ 120,453 \end{gathered}$ | $\begin{array}{r} 677 \\ 2,606 \\ \hline \end{array}$ | $\begin{array}{r} 4,712 \\ 75,836 \end{array}$ | $\begin{gathered} 48,042 \\ 196,805 \end{gathered}$ | $\begin{array}{r} 47,440 \\ 199,249 \end{array}$ | $\begin{array}{r} 95,482 \\ 396,054 \end{array}$ | $\begin{aligned} & 2,36354 \\ & 8,81556 \end{aligned}$ |
| Total, United States..... | 1,74 | 459 | 1,30 | 9,744 | 2.15 | 231,361 | 162,683 | 3,2 | 80,54 | 244,8 | 246,6 | 491,536 | 11,179 10 |
| Grand Total, Wella Canal. | 4,513 | 146,380 | \%,264 | 145,590 | 10,253 | 231,361 | 162,683 | 14,285 | 269,988 | 637,616 | 540,188 | 1,077,804 | ${ }^{23,067} 06$ |
| St. Lawrence Canals. Canadian Vessels,steam do sail... | b, | $\begin{gathered} 208,824 \\ 437,775 \end{gathered}$ | $\begin{aligned} & 177,742 \\ & 325,812 \end{aligned}$ | $4,940 \mid \text {. }$ |  | 49 | 104 | $\left.\begin{gathered} 224 \\ 70 \end{gathered} \right\rvert\,$ | $\begin{gathered} 6,740 \\ 7,893 \end{gathered}$ | $\begin{aligned} & 214,008 \\ & 438,960 \end{aligned}$ | 184, 482 333,809 | $\left.\begin{aligned} & 398,490 \\ & 772,769 \end{aligned} \right\rvert\,$ | $\begin{aligned} & 5,09943 \\ & 8,11587 \end{aligned}$ |
| Total, Canadian.......... | 8,463 | 646,599 | 503,554 | 6,006 | ......... | 49 | 104 | 314 | 14,63 | 652,96 | 518, | 1,171,2 | 13,215 |
| United States Vessels, steam Snited States Vessels | 470 1,459 | 200 4,791 | $\begin{array}{r} 252 \\ 18,188 \end{array}$ | $\begin{aligned} & 4,641 \\ & 6,964 \end{aligned}$ | [ 522 | $\begin{array}{r} 3,883 \\ 2256 \end{array}$ | $\begin{aligned} & 4,261 \\ & 1,325 \end{aligned}$ | $\begin{array}{r} 128 \\ 70,897 \end{array}$ | 6,944 4,321 | $\begin{array}{r} 8,852 \\ 82,877 \end{array}$ | $\begin{aligned} & 11,979 \\ & 35,275 \end{aligned}$ | $\begin{array}{r} 20,831 \\ 118,152 \end{array}$ | $\begin{array}{r} 22631 \\ 1,196 \\ 51 \end{array}$ |
| Total, United States.... | 1,929 | 4,991 | 18,440 | 11,605 | 11,963 | 4,10 | 5,58 | 71,025 | 11,26 | 91,729 | 47,254 | 138,98 | 1,4228 |
| Grand Total, St. Law- | 10,392 | 681,590 | 521,994 | 17,611 | 11,963 | 4,157 | 5,690 | 11,339 | 25,898 | 744,697 | 566,545 | $\xrightarrow{1,310,242}$ | 14,638 12 |

Sessional Papers (No. 4.)
A. 1877

No. 35.-Statement showing the Number, Tonnage aud Nationality of Vessels, \&c.-Continued.

No. 35.-RECAPITULATION.


## 'THNOYタ • $V$

APPENDIX A.-Continued.
No. 86.-Comparative Statement of the Total Movement of Property, Passengers and Vessels on the undermentioned Canals for the Fiscal Year ended 30 th June, 1876, and the three preceding years.

| Goods, Wares and Merchandise. | Welland Canal. |  |  |  | St. Lawrence Canals. |  |  |  | Chambly Canal. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1873. | 1874. | 1875. | 1876. | 1873. | 1874. | 1875. | 1876. | 1873. | 1874. | 1875. | 1876. |
| Farm Stock <br> Horeft.............. ..................... <br> Manufactures <br> Merabmadise. <br> Veptisble Food. $\qquad$ $\qquad$ $\qquad$ Other Agricultural Products. <br> Total Tons <br> Passemgers. $\qquad$ $\qquad$ $\qquad$ No. <br> Number of Vessels of all kinds. <br> Total Tonaage of Vessels of all kinds................. | 63, | 891 | 52204,47729,596366,559515,740 | $\begin{array}{r} 62 \\ 212,233 \\ 16,820 \\ 411,544 \\ 456,549 \end{array}$ | $\begin{array}{r} 1,368 \\ 329,096 \\ 137,729 \\ 44,358 \\ 193,641 \end{array}$ | $\begin{array}{r} 1,528 \\ 290,964 \\ 85,287 \\ 51,724 \\ 253,477 \end{array}$ | 1,344 1,533 <br> 320,382 203,963 <br> 75,291 99,161 <br> 66,302 64,128 <br> 221,390 235,934 |  | $\begin{array}{r} 248 \\ 222.288 \end{array}$ |  |  | $\begin{array}{r} 404 \\ 65,008 \end{array}$ |
|  | 310,376 | 305,661 37,888 |  |  |  |  |  |  |  |  |  |  |
|  | 56,323 419,287 | 37,888 533,910 |  |  |  |  |  |  | 116,684 | $\begin{aligned} & 93,483 \\ & 19,021 \end{aligned}$ | $\begin{aligned} & 96,241 \\ & 14,651 \end{aligned}$ | $\begin{aligned} & 65,008 \\ & 15,954 \end{aligned}$ |
|  | 544,580 | 626,202 |  |  |  |  |  |  | 15,489 | 18,095 | 15,859 | 10,336 |
|  | 1,330,629 | 1,503,750 | 1,116,418 | 1,097,198 | 706,192 | 682,980 | 684,709 | 604,719 | 369,055 | 274,951 | 232,695 | 228,848 |
|  | 7,629 | 6,919 | 5,653\| | 5,735 | 55,473 | 32,965 | 35,129 | 40,381 | 3,192 | 3,218 | 3,858 | 5,479 |
|  | 6,205 | 6,495 | 4,878 | 4,513 | 11,241 | 11,465 | 10,891 | 10,392 | 5,428 3,801 |  | 1,982 2,730 |  |
|  | 1,397,388 | 1,572,113 | 1,177,020 | 1,077,804 | 1,267,044 | 1,377,989 | 1,302,634 | 1,310,242 | 422,789, 288,822 |  | 232,810 | 241,731 |
|  | Welland Canal. |  |  |  | St. Lawrence Canals. |  |  |  | Chambly Canal. |  |  |  |
|  | Percentage of Decrease of 1876 compared with 1875 , is |  | Percentage of Decrease of 1876 compared with 1873, is |  | Percentage of Decrease of 1876 compared with 1875, is |  | Percentage of Decrease of 1876 compared with 1873, is |  | Percentage of Decrease of 1876 compared with 1875 , is |  | Percentage of Decrease of 1876 compared with 1873, is |  |
|  | 1.75 |  | $21 \cdot 27$ |  | 13.22 |  | 16.78 |  | 169 |  | 61-26 |  |


APPENDIX A.-Continued.


|  | $\stackrel{\text { ¢ }}{\underline{\text { ¢ }}}$ |  | $\begin{array}{\|c\|} \hline 8 \\ 5 \\ 5 \end{array}$ |  | 㳭 | 罭 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\text { ¢ ¢ ¢ }}{\substack{\text { ¢ }}}$ |  |  |  | 商 | 年 |  |
| 毞 | 忘 |  | $\begin{array}{l\|} \hline 0 \\ 0 \\ 0 \\ 0 \\ \hline \end{array}$ |  | $5$ |  |  |
|  | ¢ |  |  |  | $\begin{aligned} & \stackrel{8}{\mathbf{W}} \\ & \stackrel{\rightharpoonup}{6} \\ & \stackrel{\rightharpoonup}{6} \end{aligned}$ |  |  |
|  | $\stackrel{\%}{9}$ |  | 域 | 发気 | － | \％ |  |
|  | － |  |  |  | 年 | （践 |  |
| 范 | 管 |  | $\left.\begin{aligned} & \stackrel{8}{8} \\ & 0 \\ & 0 \\ & 0 \end{aligned} \right\rvert\,$ |  | 䋗 |  |  |
|  | 囪 | 喿㤩 | $\begin{aligned} & \stackrel{0}{\circ} \\ & \stackrel{y}{m} \\ & \stackrel{y}{4} \end{aligned}$ |  | 長 |  |  |
|  | 員 | $$ | $\begin{aligned} & F_{0}^{0} \\ & D_{0} \end{aligned}$ |  | 淢 | （\％ |  |
|  | $\stackrel{\text { ¢ }}{\text { ¢ }}$ |  | $\begin{aligned} & \text { micin } \\ & \stackrel{N}{\sim} \end{aligned}$ | థ్జిశ్ |  | 号 |  |
|  | 烒 |  | $\begin{aligned} & \text { 第 } \\ & \stackrel{y}{2} \end{aligned}$ |  |  | ¢ |  |
|  | $\stackrel{\text { ¢ ¢ }}{\text { ¢ }}$ |  | $\underset{\substack{\underset{\sim}{2} \\ \hline}}{ }$ | $\begin{aligned} & \text { and } \\ & \text { aid } \end{aligned}$ |  | 滑 <br> ®． |  |
|  | \％ |  |  |  |  |  |  |

No. 38.-Comparative Statement showing the Quantity of each Article transported on the Canals, during the Fiscal Years ended 30th June, 1875 and 1876, and the Tolls collected thereon.

| Articles. | 1875. |  | 1876. |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Tons. | Tolls. | Tons. | Tolls. |
|  |  | \$ cts. |  | \$ cts. |
| Ashes, Pot and Pearl .................................. | 5,558 | 63918 | 5,010 | 50684 |
| Apples ................................................. | 26,597 | 3,279 11 | 13,252 | 1,584 00 |
| Agricultural Products not enumerated, Veget- <br> able.. | 1,470 | 10718 | 2,643 | 25218 |
| Agricultural Products not enumerated, Animal | 5,402 | 51066 | 4,854 | 35996 |
| Agricultural Implements.............................. | 490 | 72 56 | 512 | 5765 |
| Barley ......... ........ .................. .................... | 24,473 | 3,398 27 | 52,168 | 8,156 25 |
| 13ricks....................................................... | 9,254 | 86044 | 7,424 | 40524 |
| Bones .................... .................................. | 3,477 | 45016 | 1,706 | 23504 |
| Baggage ......... ........................................ | 1,104 | 17795 | 1,120 | 15123 |
| Beer ................................ ...................... | 623 | 14216 | 808 | 15190 |
| Brimstone, Urude..... ................................. | 1,492 | 59195 | 4 | 160 |
| Cement nud Water Lime ............................ | 3,550 | 57577 | 3,909 | 60601 |
| Clay, Lime atd Sand .................................. | 15,943 | 1,127 91 | 13,258 | $88+45$ |
| Coal .. ................................................... | 418,357 | 62,560 11 | 511,875 | 78,513 81 |
| Corn ...... ................................................ | 148,448 | 28,420 22 | 135,208 | 25,748 57 |
| Cattle.......... ....... ....... ........................... | 1,059 | 6622 | 1,271 | 8296 |
| Cotton, Raw ........ ................................. | 22 | 240 |  | ....... |
| Coffee..................................................... | 36 | 210 | 24 | 355 |
| Crockery ................................................. | 475 | 11996 | 614 | 11741 |
| Dye Woods and Dye Stuffs ........................... | 493 | 14545 | 240 | 6553 |
| Earthenware ............................................ | 1,505 | 27074 | 1,325 | 21808 |
| Fish .. | 4,135 | 40919 | 4,155 | 25521 |
| Flax and Hemp............................ ............ | 196 | 2045 | 57 | 353 |
| Flour ....................... ....... ....................... | 61,795 | 6,474 90 | 45,050 | 4,702 36 |
| Furniture ................ ................................ | 504 | 10276 | 517 | 10467 |
| Gypsum ................................................. | 5,417 | 32411 | 4,831 | 25007 |
| Glass, Window ........................................ | 1,964 | 33272 | 1,544 | 27918 |
| Glassivare......... ............ ..... ...................... | 886 | 10696 | 1,167 | 13207 |
| Hay, Pressed ..... ........................ ........ ..... | 4,731 | 51685 | 1,974 | 18239 |
| Hogs .................... .... .............................. | 110 | 867 | 115 | 923 |
| Horses ........... ...................... .................. | 655 | 4835 | 598 | 4267 |
| Hides and Skins, Hurns and Hoofs................. | 862 | 8375 | 435 | 4966 |
| Ice ......................................................... | 80 | 400 | 13,115 | 65575 |
| Iron, Railway ............................................ | 24,857 | 3,204 50 | 41,943 | 4,508 28 |
| do Pig .................................................. | 28,301 | 2,606 86 | 27,478 | 2,371 69 |
| do all other ............................................. | 22,047 | 2,847 26 2 | 18,447 | 2,067 88 |
| Iron Ore ........................... .................\| | 55,412 | 2,770 60 | 48,654 | 2,432 70 |
| Kryolite or Chemical Ore, and other Ore except Iron.. <br> Lard nnd Lard Oil | 2,105 | 10575 10405 | 1,794 | 2970 89 1896 |
| Lard nnd Lard Oil...................................... | , 961 | 10405 | 181 | $\begin{array}{r}1896 \\ 348 \\ \hline 9\end{array}$ |
| Meals, all kinds....................................................................... | 1,763 | 15623 7256 | 3,139 | 34879 |
| Meats, other than Pork................................................................................... | 1.752 3,635 | 7256 1,34544 | $18 \pm$ 1,151 | 2527 37313 |
| Manilla....................................................................... | 92 | 2977 | 160 | 3809 |
| Molasses.................................................. | 8,367 | 70086 | 11,817 | 97875 |
| Nails....................................................... | 5,063 | 88402 | 5,736 | 92057 |
| Oats...................................................... | 17,049 | 1,806 95 | 28,600 | 3,894 34 |
| Oil, in Barrels........... ............................... | 5.414 | 1,66249 24 | 3,888 | 1,148 18 |
| Oil Cake ................................................ | 31 | 242 4.7831 | 13 | 130 298485 |
| Pease ................................................... | 54,963 | 4.78331 313 | 35,213 | 2:984 85 |
| Potatoes..................................................................................................... | 2,442 3,245 | 31359 34982 | 718 1,085 | 4293 11664 |
| Paint ............................................................. | 845 | 21753 | , 812 | 21152 |
| Pitch and Tar ...... ................................. ... | 4,595 | 36218 | 3,235 | 25867 |
| Rags.................................................... | 1,052 | 14108 | 1,310 | 13212 |

No. 38.-Comparative Statement showing the Quantity, \&c.-Continued.

APPENDIX A.-Continued.
No. (A) 24.-General Statement shewing the Quantity of each Article transported through the Welland Canal, and the Amount of Revenue collected, during the Season of Navigation in 1875.


APPENDIX A.-Continued.
No. (A) 24.-General Statement showing the Quantity of each Article transported through the Welland Canal,




40 Victoria. Sessior al Papers (No. 4.)
A. 1877




APPENDIX A.-Continued.


40 Victoria.
Sessional Papers (No 4.)
A. 1877
APPENDIX A.-Continued.
No. (A.) 27.-General Statement showing the Quantity of each Article transported through the Ottaw ('anals,


| 40 V | Sessional Papers（No．4．） | A． 1877 |
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No. (A) 27.-General Statement showing the Quantity of each Article transported through the Ottawa Canals,


No．（A．）28．－General Statement showing the Quantity of each Article transported through the Chambly Canal，

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APPENDIX A.-Continued.
No. (A) 28.-General Statement showing the Quantity of each Article transported through the Chambly Canal,


APPENDIX.-Continued.
No. (A.) 29.-General Statement showing the Quantity of each Article transported through the Ridean Canal,


No. (A) 29.-General Statement showing the Quantity of each Articlestransported through the Rideau


APPENDIX A.-Continued.
No. (A) 30.-General Statement showing the Quantity of each Article transported through the St. Peter's Canal,

| Articles. | $\underset{\substack{\text { From } \\ \text { Canadian to } \\ \text { Canadian } \\ \text { Ports. }}}{ }$ |  | From Canadian to United States Ports. |  | From United States to United States Ports. |  | From <br> United States to <br> Canadian. <br> Ports. |  | Tons. |  | Total Tons. | Amount of Tolls. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
| Coal <br> Fish <br> Flour $\qquad$ $\qquad$ Other Agricultural Products Merchandise $\qquad$ Total Freight paying Tolls. | $\begin{array}{r} 305 \\ 58 \\ 1,434 \\ 716 \\ 1,195 \\ 274 \end{array}$ | $\begin{array}{r} 5,637 \\ 1,557 \\ 16 \\ 145 \\ 5,803 \\ 976 \end{array}$ | …....... | .................. | .............. | .............. | .............. | .............. | 305581,4341 | 5,637 | 5,9421,615 | \$ cts. |
|  |  |  |  |  |  |  |  |  |  |  |  | 5942 1615 |
|  |  |  | …......... |  | ............ |  |  |  |  | ${ }_{1} 16$ | 1,450 | 1450 |
|  |  |  |  | ..... ........ | ........... | ...... | ............ | ................. | 1,716 | 145 | 861 | 861 |
|  |  |  |  | ............. | ......... | .... | ........... | ............. | 1,195 | 5,803 | 6,998 | 6998 |
|  |  |  |  | ............ | .......... | ...... | ...... | ............ | 274 | 976 | 1,250 | 1250 |
|  | 3,982 | 14,134 | .......... |  | -......... |  |  | ............ | 3,982 | 14,134 | 18,116 | 18116 |
| Total Tolls on Vessels......................... ........................................................... |  |  |  |  |  |  |  |  |  |  |  | 61162 |
| Total Revenue from all sources ....................................................................... |  |  |  |  |  |  |  |  |  |  |  | 79278 |
| Inland Revenue Department, $\quad$ A. BRUNEL, $\begin{gathered}\text { Commissioner. }\end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| Articles. | Welland Canal. |  | St.Lawrence Canals. |  | Chambly Canal. |  | $\begin{gathered} \text { Burlington Bay } \\ \text { Canal. } \end{gathered}$ |  | Ottawa Canals. |  | Rideau Canal. |  | St. Peter's Canal. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
| Class No. 3.-Continued. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |  | \$ cts. |
| Corn. $\qquad$ | 103,749 | 20,700 90 | 11,597 | 1,471 14 |  |  |  |  |  |  | 16 | 051 |  |  |
| Clax and Hemp.................. | 3 | 060 | 86 | 749 |  |  |  |  |  | ....... |  |  | ......... |  |
| Flour ............................. | 13,964 | 98932 | 24,199 | 3,451 48 | 357 | 1310 | 4,972 | .......... | 138 | 5041 | 359 | 1028 | 1450 | 1450 |
| Hay, Pressed................... | 842 | 15840 | 958 | 8082 | 903 | 6614 |  | ... ...... | 3 | 017 | 52 | 131 |  |  |
| Meals, all kinds............... | 470 | 6450 | 646 | 6460 | 42 | 140 | 74 |  | 308 | 1835 | 154 | 1478 |  |  |
| Oil Cake........................ | 3 | 060 | 7 | 061 |  |  |  |  |  |  |  |  |  |  |
| Oats.................. ........... | 3,383 | 67068 | 5,806 | 43407 | 5,130 | 45095 |  | .... .... | 988 | 6105 | 12 | 066 | ..... |  |
| Peas............................. | 2,009 | 40180 | 32,343 | 3,236 16 | 941 | 3939 | 4,876 |  | 2,187 | 13806 | 10 | 027 | ..... |  |
| Potatees ............... ........ | 882 | 12896 | 564 | 5067 | 54 | 492 | 84 | ........... | 192 | 1298 | 20 | 074 | , |  |
| Rye............................. | 917 | 18340 | 4 | 038 |  |  | .......... |  |  |  | 89 | 227 |  |  |
| Seeds, all kinds............... | 9 | 180 | 139 | 1015 | ...... | ....... | 48 | . | 8 | 051 |  |  |  |  |
| Tobacco, Raw................. | 12 | 240 | 31) | 431 | 7 | 070 | 21 |  |  |  |  |  | ...... |  |
| Wheat ......................... | 253,835 | 49,242 38 | 133,334 | 16,689 18 |  |  | 14,683 |  | 7 | 050 | 262 | 1512 | ......... |  |
| Agricultural Products, not enumerated, Vegetable... | 547 | 8390 | 1,075 | 9748 | 748 | 2605 | 216 |  | 55 | 238 | 3 | 020 | 861 | 861 |
| Bones............................ | 155 | 2488 | 1,806 | 25552 | 87 |  | 32 | ... ..... | 39 | 363 | 82 | 558 |  |  |
| Cattle ............................ | 5 | 100 | 732 | 4890 | 87 | 296 | 1 | ........ | 412 | 2765 | 5 | 017 |  |  |
| Hogs ............................. |  |  | 54 | 512 |  |  |  |  | 51 | 352 | 1 | 003 | .... |  |
| Hides and Skins, Horns and <br> Hoofs $\qquad$ | 10 | 200 | 57 | 1112 | 42 | 420 |  |  | 41 | 334 | 33 |  |  |  |
| Horses .......................... | 31 | 617 | 304 | 2569 | 15 | 053 | 48 | ........... | 172 | 734 | 5 | 018 |  |  |
| Lard and Lard Oil........... | 11 | 220 | 201 | 2823 | 4 | 040 | 60 |  | 5 | 044 | 31 | () 85 |  |  |
| Meats, other than Pork .... | 5 | 100 | 92 | 1326 | i | $\cdots$ | 7 | ....... | 7 | 014 | 1 | 005 | .. |  |
| Pork............................... | 331 | 6620 | 578 | 56201 | 1 | 1004 | 24 | ..... | 57 | 256 | 42 | 106 |  |  |
| Sheep ................. ..... ..... | 1 | $\bigcirc 20$ | 380 | 2557 | 312 | 1059 |  | .......... | 186 | 1279 | 1 | 003 |  |  |
| \| Tallow ............... ........... | 2 | 040 | 28 | 368 | .......... |  |  |  | 4 | 031 | 2 | 005 |  |  |
| W00d............................. | 31 | B 20 | 119 | 1616 | . |  | 34 | .,........ ${ }^{\text {a }}$ | 1 | 0071 | 92 | 245 |  |  |



## APPENDIX A.-Continued.

No. (A) 32 -Statement of Traffic on the undermentioned Canals, and the Amount of Tolls collected, \&c.-


Vo. (A) 34.-Statement showing the Amount of Tolls accrued each month during the Season of Navigation ended

| Canals and Offices. | April. | May. | June. | July. | August. | Sept. | Oct. | Nuv. | Dec. | Totals. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Welland Canal. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | $\$$ cts. | \$ cts. | \$ cts. |
| Clippawa. |  |  |  | 169 | 3958 | 328 | 1390 1800833 | 696 147893 |  | 6451 3386 |
| Colborne ......................... | 4219 | 12,378 77 | 18,885 39 | 21,796 37 | 23,608 95 | 18,914 11 | 18.00833 13059 | $\begin{array}{r}14,77893 \\ 7,031 \\ \hline 10\end{array}$ | $\begin{array}{r}324 \\ 27 \\ \hline 88\end{array}$ | 128,73386 63,811 1 |
| Dalhousie ...................... |  | 7,830 74 | 6,895 50 | 1,11836 51 | 10,34433 12108 121 | 9,507 829 82 | 13,055 166 166 | 7,03130 24191 | +2768...... | 63,811 1,199 33 |
| Dunnville....................... | 23240 100 | 15785 20041 | 14668 10914 | 5133 15644 | 12108 12161 | 82 $5 \times 2$ 5 | 16606 7158 | 24191 9296 | ….........1 | $\begin{array}{r}1,19933 \\ 833 \\ \hline\end{array}$ |
| Maitland..... .................... | 100 | 20041 11639 | 10914 41948 | 15644 31983 | 121685 228 | 288 65 | 39365 | $\begin{array}{r}29969 \\ \hline 16\end{array}$ | 4027 | 2,106 53 |
| Robinson......................... | ...... ...... | 11639 <br> 334 <br> 1 | 41948 15098 | 31983 19847 | 22857 22603 | 28865 14369 | $\begin{array}{r}393 \\ 17171 \\ \hline\end{array}$ | 29969 1114 | 40 <br> 671 | 2,106 1,34376 |
| Total, Welland Canal.... | 27559 | 21,019 00 | 26,607 17 | 31,642 49 | 34,690 15 | 28,993 14 | 31,880 99 | 22,562 17 | 42225 | 198,092 85 |
| St. Lawrence Canals. |  |  |  |  |  |  |  |  |  |  |
| Beauharnois |  | 19575 | 37729 | 21979 | 51733 | 77516 | 59181 | 318.9 | .... | 2,995 42 |
| Cornwall ............................... | ........... | 3,869 95 | 4,775 76 | 3,872 65 | 2,811 08 | 2,659 73 | 3,551 42 | 2,521 77 | ...... | 24,06185 439 97 |
| Edwardsburg................... | ............... | 10494 | 2752 | 8216 | 6251 | 7357 | $\begin{array}{r}2717 \\ \hline\end{array}$ | 6210 937 | ............. | 43997 14,46955 |
| Kingston......................... | . | 3,433 38 | 1,574 16 | 2,307 01 | 2,17675 48240 | $\begin{array}{r}1,48363 \\ 327 \\ \hline 86\end{array}$ | 2,506 42648 426 | 937 <br> 189 <br> 8 |  | $\begin{array}{r}14,46955 \\ 3,753 \\ \hline 85\end{array}$ |
| Lachine .......................... | $\cdots$ | $\begin{array}{r}34811 \\ 3,454 \\ \hline\end{array}$ | 1,291 <br> 4,984 | $\begin{array}{r}68761 \\ 4,951 \\ \hline\end{array}$ | 48240 $4,245 \quad 25$ | 32786 3,60915 | 42638 4,23450 | $\begin{array}{r}189 \\ 2,797 \\ \hline 29\end{array}$ | ........... | 3,75335 28,27665 |
| Montreal ........................ | .............. | 3,454 76 | 4,984 59 | 4,951 11 | 4,245 25 | 3,609 15 | 4,234 50 ; | 2,197 29 |  | 28,276 65 |
| Total,St.Lawrence Canals |  | 11,406 89 | 13,030 39 | 12,120 33 | 10,295 32 | 8,928 59 | 11,388 12 | 6,872 15 | ............. | 73,996 79 |
| Chambly Canal. |  |  |  |  |  |  |  |  |  |  |
| Chambly.................... .... |  | 42959 | 1,565 11 | 1,474 32 | 1,078 81 | 50451 | 85238 | 51293 | .............. | 6,417 65 |
| St. Johns ........................ |  | 2,166 76 | 2,328 85 | 2,517 75 | 2,803 08 | 3,091 77 | 1,991 40 | 1,681 40 | $\cdot$ | 16,581 65 |
| St. Ours .......................... | 1373 | 7932 | 10337 | 9443 | 11539 | 7717 | 9106 | 8501 | ....... | 65948 |
| Total, Ohambly Canal... | 1373 | 2,675 67 | 3,997 33 | 4,086 50 | 3,997 28 | 3,673 45 | 2,934 84 | 2,279 34 | .............. | 23,658 14 |


No. (A) 35.-General Statement showing the Number, Tonnage and Nationality of Vessels passed through the Canals during the Season of Navigation ended 31st December, 1875, and the Tolls collected thereon.


APPENDIX A.-Continued.
No (A) 35.-General Statement showing the Number, Tonnage and Nationality of Vessels passed through

REOA PITULATION．

| 景 |  | － |  <br>  <br>  |  |  | 云 | 80 0 0 0 O \％ |  <br> 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\left\|\begin{array}{l} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ N \\ N \end{array}\right\|$ |  | $\begin{aligned} & \stackrel{N}{9} \\ & \frac{1}{5} \\ & \hline \end{aligned}$ |  |  |
| ロ | ＋ |  |  |  |  | $\left[\begin{array}{l} 8 \\ 8 \\ 8 \\ 0 \\ 7 \end{array}\right.$ | ¢ |  |
| ＋ | $\stackrel{ \pm}{\square}$ |  |  | $$ |  |  |  |  |
|  | 迢 |  |  | 骨 |  | $\begin{aligned} & \mathscr{8} \\ & 0 \\ & 6 \\ & 0 \\ & \hline \end{aligned}$ | 遃 |  |
|  | $\dot{\square}$ |  | ¢్ర్ర心 | $\left\lvert\, \begin{aligned} & 6 \\ & \frac{0}{6} \\ & \hline 0 \end{aligned}\right.$ |  | $\begin{gathered} \dot{8} \\ \infty \\ \infty \end{gathered}$ | ¢ － N |  |
|  | $\begin{aligned} & \dot{E} \\ & \text { B } \\ & \text { R } \end{aligned}$ |  | $\vdots$ | $8$ |  | $\left\lvert\, \begin{aligned} & 0 \\ & 0 \\ & 2 \\ & 2 \end{aligned}\right.$ | －80\％ |  |
|  | ¢ |  |  | 옹 |  | 盛 | 3 <br>  <br> 8 <br> 8 <br> 8 <br> 8 <br> 8 |  |
|  | 号 |  | 或N： | $\begin{aligned} & 5 \\ & \stackrel{y}{2} \\ & \underset{5}{5} \end{aligned}$ |  | 筞 | 0 <br> 5 <br> $=$ <br> $=$ |  |
|  | 官 |  |  |  |  | $\stackrel{\infty}{\infty}$ | － |  |
|  | 号 |  |  | 10 0 0 0 0 0 |  |  | C |  |
|  | $\dot{\Delta}$ |  |  | $\left\|\begin{array}{l} 8 \\ 0 \\ 0 \\ 0 \\ -1 \end{array}\right\|$ |  | $\left[\begin{array}{l} 9 \\ \infty \\ 5 \\ 2 \end{array}\right.$ |  |  |
|  |  |  |  | 등 ज |  | $\begin{gathered} \text { No } \\ \text { in } \end{gathered}$ |  |  |
|  |  |  |  |  |  |  |  |  |

## APPENDIX A.-Continued.

No. 39.-Statement of the Number and Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation, ended 31st December, 1874.

WELLAND AND ST. LAWRENCE CANALS.

| Canadian. |  |  |  |  | United States. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Steam Vessels. |  |  | Sailing Vessels. |  | Steam Vessels. |  | Sailing Vessels. |  |
| Tonnage. | Number. | Total <br> Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. |
| 8 | 13 | 104 | 27 | 216 | 2 | 16 | 1 | 8 |
| 10 | 5 | 50 | 10 | 100 | 3 | 30 | 3 | 30 |
| 12 | 4 | 48 | 1 | 12 | 4 | 48 | ......... |  |
| 15 | 11 | 165 | 3 | 45 | 10 | 150 | 1 | 15 |
| 20 | 10 | 200 | 13 | 260 | 10 | 200 | 2 | 40 |
| 25 | 10 | 250 | 4 | 100 | 2 | 50 | ..... ...... |  |
| 30 | 10 | 300 | 5 | 150 | 5 | 150 | 2 | 60 |
| 35 | 9 | 315 | 10 | 350 | 1 | 35 | 1 | 35 |
| 40 | 6 | 240 | 51 | 2,040 | ........ | .......... .... | 2 | 80 |
| 45 | 8 | 360 | 8 | 360 | 1 | 45 | 1 | 45 |
| 50 | 3 | 150 | 14 | 700 | 3 | 150 | 3 | 150 |
| 55 | 4 | 220 | 10 | 550 | 2 | 110 | 2 | 110 |
| 60 | 3 | 180 | 11 | 660 | 3 | 180 | 9 | 540 |
| 65 | 5 | 325 | 9 | 585 | - 2 | 130 | 25 | 1,625 |
| 70 | ......... | .......... | 13 | 910 | 1 | 70 | 30 | 2,100 |
| 75 | 2 | 150 | 20 | 1,500 | ......... | ............ | 19 | 1,425 |
| 80 | 1 | 80 | 22 | 1,760 | .............. | ............. | 10 | 800 |
| 85 | 2 | 170 | 10 | 850 | .......... | .............. | 5 | 425 |
| 90 | .......... | ............ | 24 | 2,160 |  | .............. | 3 | 270 |
| 95 | 1 | 95 | 47 | 4,465 | 1 | 95 | 3 | 285 |
| 100 | 9 | 900 | 47 | 4,700 | . |  | 7 | 700 |
| 105 | 3 | 315 | 33 | 3,465 | ............. | .............. | 7 | 735 |
| 110 | 1 | 110 | 38 | 4,180 | 1 | 110 | 11 | 1,210 |
| 115 | 2 | 230 | 18 | 2,070 | , | .............. | 5 | 575 |
| 120 | 1 | 120 | 19 | 2,280 | . | ...... | 9 | 1,080 |
| 125 | 3 | 375 | 13 | 1,625 | $\cdot$ | ..... | 4 | 500 |
| 130 | ..... | ............ | 19 | 2,470 | ..... | .............. | 1 | 130 |
| 135 | 1 | 135 | 22 | 2,970 | 1 | 135 | 1 | 135 |
| 145 | 2 | 140 | 13 18 | 1,820 | ............ | ........ |  |  |
| 150 | 1 | 150 | 20 | 3,000 | . ${ }^{\text {an....... }}$ | 150 | 1 | 150 |
| 155 | 1 | 155 | 19 | 2,945 | ... | . | 3 | 465 |
| 160 | 1 | 160 | 15 | 2,400 | .... | .............. | ........ ..... |  |
| 165 170 |  |  | 13 | 2,145 | ............ | ..... |  |  |
| 170 175 | $\cdots$ | ............. | ${ }_{11}^{2}$ | 340 | 1 | 170 | 5 | 850 |
| 180 |  | .............. | 5 | 1,925 900 | .................. | ................ | .............. |  |
| 185 | .. | 370 | 9 | 1,665 | ................. | ................... | - 1 | 185 |
| 190 | 1 | 190 | 7 | 1,330 |  |  |  |  |
| 195 | 3 | 390 | 12 | 2,340 | \|.................. | .................. | ${ }^{\text {............. }}$ | 585 |
| 200 |  | . ......... | 4 | 800 | 1 | 200 | 1 | 200 |
| 205 |  | .............. | 5 | 1,025 | ............. | .............. | 8 | 1,640 |
| 210 |  |  | 3 | 630 | .............. | ............... | 4 | 840 |
| 215 | 1 | 215 | 4 | 860 | ............. | ............... | 6 | 1,290 |
| 220 | 4 | 880 | 7 | 1,540 | ........... ... | .............. | 7 | 1,540 |
| 225 | 1 | 225 | 8 | 1,800 | .............. | ..... | 8 | 1,800 |
| 230 | 1 | 230 | 5 | 1,150 | . | . | 6 | 1,380 |
| 235 | 1 | 235 | 4 | 940 | ............ |  | 8 | 1,880 |
| 240 | 1 | 240 | 3 | 720 | ........... | .............. | 3 | 720 |
| 245 | 3 | 735 | 8 | 1,960 | 1 | 245 | 3 | 735 |
| 250 | 2 | 500 | 3 | 750 | 1 | 250 | 1 | 250 |

## APPENDIX A.-Continued.

No. 39.-Statement of the Number and Tonnage of all kinds of Vessels passed through the Canals, \&c.-Continued.
WELLAND AND ST. LAWRENGE CANALS.-Continued.

| Canadian. |  |  |  |  | United Stateg. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Steam Vessels. |  |  | Sailing Vessels. |  | Steam Vessels. |  | Sailing Vessels. |  |
| Tonnage. | Number. | Total Tonnage. | Number. | Total <br> Tonnage. | Number. | Total Tonnage. | Number. | Total <br> Tonnage. |
| 255 |  |  | 6 | 1,530 | 1 | 255 | 9 | 2,295 |
| 260 | 1 | 260 | 3 | 780 | 1 | 260 | 2 | 520 |
| 265 | 5 | 1,325 540 | 4 | 1,060 | ............ | ............. | 12 | 3,180 |
| 275 | 2 | 550 | 2 | 550 | .... | ...... | 6 | 1,350 |
| 280 |  | ............. | 4 | 1,120 | .. |  | 4 | 1,120 |
| 285 | 4 | 1,140 | 11 | 3,135 | .... ......... | ............. | 6 | 1,710 |
| 290 | 2 | 580 | 1 | 290 |  |  | 9 | 2,610 |
| 295 | 1 | 295 | 8 | 2,360 | 1 | 295 | 14 | 4,130 |
| 300 | 2 | 600 | 2 | 600 | 1 | 300 | 17 | 5,100 |
| 305 | 4 | 1,220 | 7 | 2,135 | 3 | 915 | 12 | 3,660 |
| 310 | 2 | 620 | 4 | 1,240 | 1 | 310 | 10 | 3,100 |
| 315 |  |  | 6 | 1,890 | 1 | 315 | 15 | 4,725 |
| 320 |  |  | 8 | 2,560 | ..... ..... |  | 13 | 4,160 |
| 325 |  |  | 4 | 1,300 | 1 | 325 | 13 | 4,225 |
| 330 | 1 | .......... | 3 | 990 | ..... ....... | ..... ........ | 10 | 3,300 |
| 335 | 1 | 336 | 5 | 1,675 | .. | . | 10 | 3,350 |
| 340 |  | ............... | 6 | 2,040 | . | ...... . ....... | 3 | 1,020 |
| 345 | 1 | 345 | 6 | 2,070 |  |  | 7 | 2,415 |
| 350 |  |  | 7 | 2,450 | .... | .............. | 6 | 2,100 |
| 355 | .............. | . | 6 | 2,130 | .... | .............. | 3 | 1,065 |
| 360 | ....... |  | 8 | 2,880 | ......... .... | - | 1 | 360 |
| 365 | ............. |  | 7 | 2,555 | ............. | - | 1 | 365 |
| 370 | ..... |  | 8 | 2,960 | .............. | ...... ........ |  |  |
| 375 |  | \|.............. | 6 | 2,250 | ..... ........ | .............. | 1 | 376 |
| 385 |  |  | 4 | 1,540 | .............. | ............. | 1 | 380 |
| 390 | . | ....... |  |  | .............. | ............. |  |  |
| 395 |  |  | 3 | 1,185 |  |  |  |  |
| 400 |  |  | 1 | 400 | 1 | 400 | .............. | ............... |
| 410 | ................ | ... |  | ....... |  |  |  |  |
| 415 |  |  |  |  | 1 | 415 | ................. | .............. |
| 425 |  |  | ........... | $\cdots$ | 1 | 420 | ........... | ........ |
| 430 | - |  |  | . | 1 | 430 | ............. |  |
| 435 | . | ............ | ....... | ......... |  |  | ........... | .............. |
| 436 |  |  | .... |  | 2 1 | 870 | .............. | ......... |
| 437 |  | , | ........ |  | 2 | 874 | . |  |
| 446 |  |  |  | .......... | 2 | 880 | .......... |  |
| 447 460 |  |  | ....... |  | 1 | 447 |  |  |
| 460 461 |  |  |  |  | 1 | 460 |  |  |
| 466 |  |  |  | ...... | 1 | 461 | ........ |  |
| 467 479 |  |  |  |  | 1 | 467 |  |  |
| 479 490 |  |  | 1 | 479 | 1 | 479 |  |  |
| 500 |  | 490 | ............. | ............. | ............. | ... | .... | ...... |
| 504 516 |  |  |  |  | - 1 | 604 |  |  |
|  |  | 516 | ... |  |  | ......... | ............... |  |

APPENDIX A.-Continued.
No. 39.-Statement of the Number and Tonnage of all kinds of Vessels: passed through the Canals, \&c.-Continued.
WELLAND AND ST. LAWRENCE CANALS.-Continued.

| Canadian. |  |  |  |  | United States. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Steam Vessels. |  |  | Sailing Vessels. |  | Steam Vessels. |  | Sailing Vessels. |  |
| Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. |
| 532 |  |  | 1 | 532 | 1 | 532 | ... |  |
| 551 |  | . ......... | 1 | 551 |  |  | . | ............. |
| 627 715 | ............ | ............ | 1 | 627 | ........... | ......... | ........ | ............. |
| Total.... | 184 | 20,033 | 866 | 126,477 | 86 | 14,215 | 427 | 86,173 |
| RIDEAU, OTTAWA AND CHAMBLY CANALS, |  |  |  |  |  |  |  |  |
| 8 | 11 | 88 | 4 | 32 | 1 | 8 | . |  |
| 10 | 8 | 80 | 13 | 130 | .............. | . | 3 |  |
| 15 | 3 | 45 | 4 | 60 | .................. | ................. | ..... |  |
| 20 | 5 | 100 | 10 | 200 | ...... ......... | ................ | ...... | . |
| 25 | 5 | 125 | 5 | 125 | ..... | ... | ....... | . |
| 30 | 5 | 150 | 5 | 150 | $\cdot$ | ......... ..... | .............. | ............ |
| 35 | 3 | 105 | 8 | 280 | .............. | . ....... ..... |  | ......... |
| 40 | 1 | 40 | 10 | 400 | .............. | ..... | 1 | 40 |
| 45 | 5 | 225 | 3 | 135 | $\cdot$ | .............. | 2 | 90 |
| 50 | 4 | 200 | 20 | 1,000 | ...... ....... | .............. | 4 | 200 |
| 55 | 5 | 275 | 5 | 275 | 1 | 55 | 21 | 1,155 |
| 60 | 1 | 60 | 15 | 900 | ............. | .............. | 74 | 4,440 |
| 65 | 3 | 195 | 10 | 650 | 1 | 65 | 156 | 10,140 |
| 70 | 1 | 70 | 9 | 630 | 1 | 70 | 110 | 7,700 |
| 75 | 4 | 300 | 11 | 825 | ........... | .............. | 74 | 5,550 |
| 80 | 1 | 80 | 12 | 60 | .............. | .............. | 19 | 1,520 |
| 85 | 2 | 170 | 15 | 1,275 | ...... ....... | ............... | 7 | 595 |
| 90 | 2 | 180 | 48 | 4,320 | .............. | $\cdot$ | 3 | 270 |
| 95 | ........ | .......... | 63 | 5,985 | .............. | .............. | 9 | 855 |
| 100 | 1 | 100 | 34 | 3,400 | .............. | .............. | 22 | 2,200 |
| 105 | ......... | .............. | 44 | 4,620 | - | .............. | 15 | 1,575 2,310 |
| 110 | .............. | .............. | 22 9 | 2,420 1,035 | ............... |  | 15 | 1,725 |
| 120 | ................... | ................... | 10 | 1,200 | ................. |  | 7 | 840 |
| 125 |  | \|........ ..... | 4 | 500 |  |  | 3 | 375 |
| 130 | .............. | ............... | 8 | 1,040 |  |  | 1 | 130 |
| 135 | .............. | ............. | 3 | 405 |  |  | 2 | 270 |
| 140 | -............. | .............. | 7 | 980 | ...... ........ | - | ....... ...... | .............. |
| 145 | .......... | ............. | 1 | 145 | .............. | ........... | 1 | ............ |
| 150 | .............. | .............. | 5 | 750 | .............. | . | 1 | 150 |
| 155 | .......... | ..... | 1 | 155 | ..... ........ | ............. | ... | ............ |
| 160 175 | ${ }_{1}$ | ${ }^{\cdots} .17 .$. | 1 | 160 |  | ........ | ........... | ............... |
| 235 |  | ....... | 1 | 235 |  |  |  |  |
| Total.... | 74 | 2,799 | 422 | 35,401 | 4 | 198 | 570 | 42,160 |
| Inland Revenue Department, Ottawa, 31st Decembèr, 1875. |  |  |  |  |  |  |  |  |

## APPENDIX A.-Continued.

Ńo. 40.-Statement showing the Number and Classified Tonnage of all kinds passed through the Canals, during the Season of Navigation ended the 31st December, 1874.
WELLAND and st. LaWRENCE canals.

Comparative Statement of Grand Total Freight passed through the undermentioned Canals during the Season of


## APPENDIX A.-Continued.

No. 39.-Statement of the Number and Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1875.

WELLAND AND ST. LAWRENCE CANALS.

| Canadian. |  |  |  |  | United States. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Steam Vessels. |  |  | Sailing Vessels, |  | Steam Vessels. |  | Sailing Vessels. |  |
| Tonnage. | Number. | Total Tonnage. | Number. | Total <br> Tonnage. | Number. | Total Tonnage. | Number. | Total Tonnage. |
| 8 | 13 | 104 | 10 | 80 | 4 | 32 |  | . |
| 10 12 | 6 8 | 60 96 | 9 | 90 | 4 | 40 | 3 | 30 |
| 15 | 5 | 75 | 1 | 15 | 11 | 165 | 2 | 30 |
| 20 | 10 | 200 | 6 | 120 | 4 | 80 | 3 | 60 |
| 25 | 25 | 625 | 3 | 75 | 7 | 175 |  |  |
| 30 | 7 | 210 | 5 | 150 | 2 | 60 | . .... .... | . .. ... |
| 35 | 11 | 385 | 7 | 245 | 5 | 185 | 1 | 35 |
| 40 | 4 | 160 | 28 | 1,120 | 3 | 120 | ........ ..... | ............... |
| 45 | 8 | 360 | 8 17 | 360 |  | 100 | ........ | - |
| 55 | 5 | 275 | 9 | 495 | 4 | 0 | 5 | 100 |
| 60 | 3 | 180 | 14 | 840 | 4 |  | 38 | 2280 |
| 65 | 4 | 260 | 10 | 650 |  | 130 | 80 | 2,280 5,200 |
| 70 | 1 | 70 | 10 | 700 |  | . . ........ | 77 | 5,390 |
| 75 | 7 | 525 | 20 | 1,500 | 2 | 150 | 52 | 3,900 |
| 80 | 1 | 80 | 30 | 2,400 | 2 | 160 | 13 | 1,040 |
| 85 | 4 | 340 | 22 | 1,870 | .... | .............. | 5 | 425 |
| 90 | 1 | 90 | 47 | 4,230 | .. ......... | ........... | 9 | 810 |
| 95 | 3 | 285 | 55 | 5,225 | 2 | 190 | 10 | 950 |
| 100 | 8 | 800 | 67 | 6,700 | .............. | ....... | 33 | 3,300 |
| 105 | 2 | 210 | 66 | 6,930 | ............. | ......... | 22 | 2,210 |
| 110 | 2 | 220 | 36 | 3,960 | 1 | 110 | 26 | 2,860 |
| 115 | 3 | 345 | 16 | 1,840 | ............ | ........... | 8 | 920 |
| 120 | 1 | 120 | 17 | 2,040 | 1 | 120 | 5 | 600 |
| 125 | 1 | 125 | 7 | 870 | .............. | ...... ........ | 5 | 625 |
| 130 | 1 | 130 | 13 | 1,690 | .............. | ... ......... | 2 | 260 |
| 135 | 2 | 270 | 14 | 1,890 | 2 | 270 | 1 | 135 |
| 140 | 2 | 280 | 10 | 1,400 | ........ | .............. | 1 | 140 |
| 145 | . | . ..... | 16 | 2,320 | ........... | ........... |  |  |
| 150 | 5 | 750 | 10 | 1,500 | ............. | .......... | 2 | 300 |
| 155 | 1 | 155 | 17 | 2,635 | .............. | . ........ |  | .......... |
| 160 | 2 | 320 | 10 | 1,600 | ..... | .. | 1 | 160 |
| 165 | $\ldots$ | -7..... | 10 | 1,650 | ....... | ........... | 1 | 165 |
| 170 175 | 1 | 170 | 1 | 170 | 1 | 170 | 7 | 1,190 |
| 175 180 | 3 | 425 | 8 | 1,400 | ……....... | ........ | 1 | 175 |
| 185 | .............. | . $18 . .$. | 8 | 1,440 | .............. | ......... |  | .......... |
| 190 |  | 185 | 10 | 1,850 | .............. | ....... |  | ....... |
| 195 | I | 195 | 12 | 1.340 | -............ | ...... | 2 | 390 |
| 200 |  |  | 6 | 1,200 | .................... | .......... | 5 | 1,000 |
| 205 | . |  | 6 | 1,230 | , | . | 1 | 205 |
| 210 |  |  | 2 | 420 | 1 | 210 | 5 | 1,050 |
| 3 | 2 | 430 | 3 | $6+5$ |  | , | 4 | 860 |
| 420 | 3 | 660 | ! | 1,980 |  | .... ....... | 2 | 440 |
| $2: 5$ 23 23 |  |  | 4 | 1909 | 1 | 225 | 6 | 1,350 |
| $23)$ | 1 | 230 | 6 | 1,380 | ............. | ............. | 7 | 1,610 |
| 235 | 1 | 235 | 4 | 940 | ....... | ............. | 7 | 1,645 |
| 240 | 1 | 240 | 5 | 1,200 | . ........... | .............. | 2 | 480 |
| 245 | 3 | 735 | 4 | 980 | ............. | ...... ....... | 3 | 735 |
| 250 255 | ............. | ............ | 3 | 750 | .............. | ............. | 2 | 500 |
| 250 | .............. | .......... | 3 |  | 1 | 255 | 5 | 1,275 |

APPENDIX A.-Continued.
No. 39.-Statement of the Number and Tonnage of all kinds of Vessels passed through the Canals, \&c.-Continued.

WELLAND AND ST. LAWRENCE CANALS.-Continued.

| Canadian. |  |  |  |  | United States. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Steam Vessels. |  |  | Sailing Vesseis. |  | Steam Vessels |  | Sailing Vessels. |  |
| Tonnage. | Number. | Total Tonnage. | Number | Total Tonnage. | Namber. | Total Tonnage. | Number. | Total Tonnage. |
| 260 | 1 | 260 | 2 | 520 | 1 | 260 | 4 | 1,040 |
| 265 | 4 | 1,060 | 4 | 1,060 | .......... | ........... | 7 | 1,855 |
| 270 | 3 | 810 | 5 | 1,350 | .... | .. | 2 | 540 |
| 275 | 2 | 550 | 2 | 550 | ........ | ..... ........ | 5 | 1,375 |
| 280 | . | ........ | 2 | 560 | .............. |  | 8 | 2,240 |
| 285 | 4 | 1,140 | 6 | 1,710 |  |  | 4 | 1,140 |
| 290 | 3 | 870 | 3 | 870 |  |  | 13 | 3,770 |
| 295 | 1 | 295 | 9 | 2,655 | 1 | 295 | 9 | 2,655 |
| 300 | 3 | 900 | 3 | 900 | 1 | 300 | 18 | 5,400 |
| 305 | 3 | 915 | 5 | 1,525 | 2 | 710 | 6 | ],830 |
| 310 | ....... | ......... ..... | 5 | 1,550 | ........... | ............. | 9 | 2,790 |
| 315 | ............ | . | 2 | 630 | ............. | .............. | 10 | 3.150 |
| 320 | ............ | .... | 10 | 3,200 | ... | $\ldots$ | 17 | 5,440 |
| 325 | ............. | .............. | 2 | 650 | ..... | ........... | 9 | 2,925 |
| 330 | .............. | ............. | 3 | 990 | 1 | 330 | 10 | 3,300 |
| 335 | 1 | 335 | 6 | 2,010 |  | . | 10 | 3,350 |
| 340 | .... | ...... | 6 | 2,040 | ....... ..... | . | 2 | 680 |
| 345 | 1 | 345 | 3 | 1,035 | .. | ... | 6 | 2,070 |
| 350 | ... | .............. | 3 | 1,050 | .............. | .............. | 5 | 1,750 |
| 355 | . ...... | .............. | 8 | 2,840 | .............. | ............ | 2 | 710 |
| 360 | ..... |  | 11 | 3,960 | ... | $\cdots$ | 2 | 720 |
| 365 | 1 | 365 | 9 | 3,285 | ....... | .... | 1 | 365 |
| 370 | .... |  | 5 | 1,850 | ............. | ......... | ..... | . |
| 375 | . |  | 6 | 2,250 |  |  | 1 | 375 |
| 380 | 1 | 380 |  |  |  |  | 1 | 380 |
| 385 | 2 | 770 | 5 | 1,925 | ....... | ........... | ............. | . . ........ |
| 390 | 1 | 390 |  |  |  | ... | ..... ..... | . $1 . . . . . .$. |
| 395 400 | $\ldots$ | ……..... | 3 1 | 1,185 400 | ............ | ... | ......... | . ........ |
| 405 | ..... |  |  |  | ....... | . | ... | .. |
| 410 | ..... | ..... | . | ..................... | ........ | .......... | ...... | ............ |
| 415 | - | .......... | ........ | ................ | 1 | 415 |  | . |
| 420 | .... | .............. | ...... ........ | ................ | 1 | 420 | ............. | .... ........ |
| 430 |  | 430 | ............. | .............. | ... | ........... | ........... | ........ |
| 436 | ... | ............... | .......... | ............... |  | 435 | .............. | .............. |
| 437 | ....... | ................. | ................. | ..................... | 2 | 874 | .................. | ........ |
| 440 | ............... | .............. | .... ......... | ................ | 2 | 880 | .............. | .............. |
| 447 | ...... | ............. | .............. | ............... | 2 | 894 | ............. | ......... .... |
| 461 504 |  | ........... | ........... | ................ | 1 | 461 504 | ... | ......... |
| 516 | 1 | 016 |  |  |  |  | ................ |  |
| 520 | - |  | 1 | 520 |  |  |  | .......... |
| Total... | 212 | 22,591 | 849 | 120,650 | 82 | 10,405 | 628 | 95,145 |

## APPENDIX A.-Continued.

No. 39.-Statement of the Number and Tonnage of all kinds of Vessels passed through the Canals, \&c.-Continued.

RIDEAU, DTTAWA AND CHANBLY CANALS.

APPENDIX A.-Continued.
mber and Classified Tonnage of all kinds passed through the Canals during
the Season of Navigation in 1875
welland and :t. lawrence canals.



## APPENDIX A.-Continued.

No. 41.-The Canals of the Dominion of Canada, 1875.
RATES OF TOLL.


RATES OF TOLL.-Continued.


## No. 41.-Continued.

STANDARD FOR ESTIMATING WEIGHTS.

|  | Tons. |
| :---: | :---: |
| $2,000 \mathrm{lbs}$. avoirdupo |  |
| ${ }_{\text {Per M M }}$ M. is per thousand feet. |  |
| Green Fruit, 9 barrels are......... |  |
|  |  |
|  | 1 |
| Bark, 4 cords.......................................... ........ ...... ................................... 1 |  |
| Bigcuit and Crackers, 9 barrels.............................................................................................................. 1 |  |
| Bricks, common, 1,000 ............ ............................. ............................................. | 2 |
|  | 1 |
| Cement and Water Lime, 7 barrels | 1 |
|  | 3 |
| Fire Bricks, 1,000 <br> Fish, 7 barrels | 1 |
| Flour, 9 barrels....................................................................................................................................... | 1 |
| Typsum and Manganese, 6 barrels <br> Horses, 2. | 1 |
| Lard and Tallow, 7 barrels or 22 kegs | 1 |
|  |  |
|  | 1 |
|  | I |
| Pork, 7 barrels .................................. ........................................................................................................... |  |
|  | Salt, 7 barrels ................................. ............................................................................... ${ }_{1}$ |  |
|  |  |  |
| Stone, 12 cubic feet................................................................................................................................. | 1 |
|  | 1 |
| Whiskey, 4 barrels or 215 gallons............................................................................................................. | 72 |
|  | 1 |
| Empty Barrels, 10 $\qquad$ <br> Barrel Hoops, 10 Mille |  |
|  | 1 |
|  | 1 |
|  | 1 |
|  |  |
|  | 1 |
|  | 8 |
| Staves and Headings, Pipe, 1 Mille is do do West | 4 |
| do do So Sarrel, 1 Mille | 21 |
| Saw Logs, standard, 1 . .......................................................................................................................................................................... |  |
|  | 1 |
| Telegraph Poles, 10 , or 40 cubic feet...................................................................... | 1 |
|  | 1 |
|  | 1 |
| All other Woodenware, or partly manufactured Wood, 40 cubic feet, as per Tariff ............. Traverses, 40 cubic feet or 5 pieces. <br> Floats, 50 lineal feet |  |
|  | 1 |

Note.-By the Weights and Measures Act of 1873, the following articles are to be estimated by the Cental of $100 \mathrm{lbs} .$, viz. : Barley, Beans, Charcoal, Corn, Oats, Peas, Potatoes, Rye, Salt, Seeds and Wheat.

## No. 41.-Continued. <br> notice.

The following Way Rates to be levied on Vessels and Property passing the several Sub-Divisions of the Canals.


## Ottafa and Rideau Canals.

The Navigation of these Canals is divided into four sections: "Carillon and Grenville," "Ottawa," "Smith's Falls," and "Kingston Mills." Vessels and Freight passing one section to be charged one-fourth; two sections, one-half, and so on.

## General.

Nots.-Any fraction of a ton freight to be charged one ton, and portions of sections to be charged as a whole section on all the above Canals.

The passing of Saw Logs or other Lumber through any of the Canals or Sections there of, is to be at all times governed by the regulations for their management.

## Harbor Dege.

Vessels receiving or discharging freight at the premises of the Welland Railway, at Ports Colborne or Dalhousie, are to be free from Harbor Dues; but all other Vessels discharging or receiving cargo at Port Dalhousie, Port Colborne or Port Maitland, shall pay on every ton of freight so received or discharged-Two cents.

No. 42.-Statement showing the Revenue accrued on the undermentioned Works, for Slides and Booms, during the Year ended 30th Jane, 1876.

| From | Amount of Slide and Booms Dues accrued on Timber and Saw Logs. |  | Total. |
| :---: | :---: | :---: | :---: |
|  | On River to Junction with the Ottawa. | Further through Ottawa Works. |  |
|  | \$ cts. | \$ cts. |  |
| Madawaska................. ................................ | 18,065 08 | 6,433 46 |  |
| Petewawa.................................................. | 6,433 18 | 3,467 85 |  |
| Dumoine................................. ................... | 1,450 23 | 3,053 24 |  |
| Black River...................................... .......... | 2,950 68 | 2,850 04 |  |
| Coulonge .................... .............................. | 3,196 92 | 3,092 38 |  |
| Gatineau......... .......................................... | 10,734 78 | 84608 |  |
| Main Ottawa, including its tributaries without Government improvements |  | 21,825 46 |  |
|  | 42,830 87 | 41,568 51 | \$84,399 38 |

A. BRUNEL,

Commissioner.
Inland Revenue Department,
Ottawa, 31st July, 1876.

APPENDIX A.--Continued.-SLIDES AND BOOMS.
No. 43.-Statement of the number of pieces of Timber and Saw Logs that passed through the Gorernment Slides and Booms on the Ottawa and its tributaries during the undermentioned years.

A. BRUNEL,

Commissioner.

Inland Revenue Department, Ottawa, 31st July, 1876.


| Pieces. | Description of Timber, \&c. | Measured, Culled, or Counted | Tons Standard. | Rate. |  |  | Office Fees. | Cullers' | TotalA mountAccrued. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Office Fees. | Cullers' Fees. | Total Fees. |  |  |  |
|  | Spruce ......................................... | Measured........  <br> do $\ldots . . . .$. <br> do $\ldots . .$. <br> do $\ldots . . . . .$. <br> do $\ldots . . .$. <br> do $\ldots . . .$. <br> do $\ldots . . .$. |  <br> Tons. Pts. <br> 3213 <br> 5,51328 <br> 0 <br> 1,066 <br> 1,09 <br> 45 <br> 41 <br> 12 <br> 12 <br> 10 <br> 10 <br> 171,290 <br> 1 | cts. | cts. | cts. | \$ cts. | \$ ots. | \$ ets. |
| 5,395 | Hemlock..................................................... |  |  |  |  |  |  |  |  |
|  | Walnut............................... ........... |  |  |  |  |  |  |  |  |
| 866 21 | Whickory..................................................................... |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 21 \\ & 13 \end{aligned}$ | Cherry.................................................. |  |  |  |  |  |  |  |  |
| 5 | Balm of Gilead....................................... |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | $7_{15}{ }^{\text {s/5 }}$ | 5,652 57 | 7,194 18 | 12,846 75 |
| 2,565 | Waney White Pine..................... .... | Culled,String. | 3,168 05 | 33 | 9 | 14 | 15841 | 28513 | 44354 |
| 3 | White Pine. |  | 320 |  | $7{ }^{76}$ | $10{ }_{10}{ }^{\text {\% }}$ | 012 | 025 | 037 |
| 2,156 | Ash. | $\begin{array}{ll} \text { do } & \ldots \\ \text { do } & \ldots \\ \text { do } & \ldots . . \end{array}$ | $\begin{array}{r}1,36918 \\ 7,484 \\ 37028 \\ \hline \mathbf{3 , 2 1 4} 20 \\ \hline\end{array}$ | $3{ }^{3} 10$ |  |  |  |  |  |
| 14,656 1,190 | Birch ......... ............................................................... |  |  |  |  |  |  |  |  |
|  |  |  |  | 10 | $9{ }^{4} 4$ | $13_{19 .}^{\text {¢ }}$. | 41466 | 86617 | 1,280 83 |
| 2,496 | Hemlock | Measured........ | 2,542 15 | $1{ }^{18}$ | $2{ }^{15}$ | 4 | 4322 | 5848 | 10170 |
| 2,611,151 | Pine Deals..................................... | Culled........... | 3,000,946 00 | 10 | 50 |  |  | 15,349 73 | $\begin{array}{r} 18,41967 \\ 8,09646 \\ 540 \\ 80418 \\ 1,04383 \\ 4136 \end{array}$ |
| 1,389,180 | Spruce Deals................... ................ | do ......... | $\begin{array}{r} 3,069,94600 \\ 1,349,41000 \\ 1,20000 \end{array}$ | 10 | $\begin{aligned} & 50 \\ & 37 \\ & 35 \end{aligned}$ | 60 45 | 1,349 41 | 15,349 <br> 6,747 <br> 05 <br> 4 <br> 4 |  |
| 1,200 160836 | Hemlock Deals....... ........................ | do $\begin{aligned} & \text { do } \\ & \text { do } \\ & \text { co........ }\end{aligned}$ |  | $\begin{array}{r}8 \\ 15 \\ \hline\end{array}$ |  | 50 | 9600 241 | 44564730738 |  |
| 208,772 | Spruce Planks...................................... | do .......... |  | 15 | 3535 | 5040 | 31315517 |  |  |
| 10,341 | Boards.................................................... |  |  | 555 |  |  |  | $\begin{array}{r}3619 \\ 1,27680 \\ \hline\end{array}$ |  |
| 1,791,982 | Pine Deals.............. ....................... |  |  |  |  | ${ }_{11}^{117}$ | 19340 |  | + <br> 22964 <br> 4585 <br> 8881 |
| 406,408 | Spruce Deals.................................. | do .... | 386,798 50 | 5 | ${ }_{5}^{63^{3}}$ |  |  | 25915 8881 |  |
| 177,614 64,730 | Pine Plank................................................................ | $\begin{array}{ll}\text { do } \\ \text { do } \\ \text { do } & \text {..... }\end{array}$ |  |  |  | 5 | ..................... | 3236 | $3236$ |
| 534,340 | Boards (per M. ............................................ | do ..... |  |  | 5 | 5 |  | 2672 |  |
| 711 | Cords of Lathwood................................... | $\left\|\begin{array}{c} \text { Culled............ } \\ \text { do } \\ \text { do } \\ \text { a........ } \end{array}\right\|$ | $\begin{gathered} 1093 \cdot 1 \cdot 12 \\ 861 \cdot 0 \cdot 19 \end{gathered}$ | $\begin{gathered} 10 \\ 1 \\ 180 \end{gathered}$ |  |  | $\begin{array}{r} 7113 \\ 1,09373 \\ 43060 \end{array}$ | $\begin{array}{r} 20199 \\ 2,73434 \\ 96456 \end{array}$ | $\begin{aligned} & 3,828 \quad 07 \\ & 1,39516 \end{aligned}$ |
| 995,265 | Standard Staves.... |  |  |  |  |  |  |  |  |
| 1,033,459 | \|Weet India Staves... |  |  |  |  |  |  |  |  |



[^10]

No. 46.--Statement of Bill Stamps issued on Requisition by the Inland Revenue Department, for the Year ended


APPENDIX B.

## DETAILS OF EXPENDITURE.

## APPENDIX B

No. 1.-Details of Excise Expenditure, 1875-76


Appendix B.-No. 1.—Details of Excise Expenditure, 1875-76.—Conti nued


## Appendix B.-No. 1.-Details of Excise Expenditure, 1875-76.-Continued



Appindix B.-No. 1.-Details of Excise Expenditure, 1875-76.-Continued.



Appendix B.--No. 1.-Details of Excise Expenditure, 1875-76.-Continued.


Appendix B.-No. 1.-Details of Excise Expenditure, 1875-76.-Continued.


Appendix B.-No. 1.-Details of Excise Exdenditure, 1875-76.-Continued:



Appendix B.-No. 1.-Details of Excise Expenditure, 1875-76.—Continued.


Appendix B.- No. 1.--Details of Excise Expenditure, 1875-76. - Continued.


## Inland Revenue Department, Ottawa, 31st July, 1876.

A. BRUNEL,<br>Commissioner.

## APPENDIX B-..-Continued.

No. 2.-Details of Canal Expenditure, 1875-78.

| Canals. | Names of Employés. |  | Amounts Paid. | Total. | Grand Total. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Welland Canal. <br> Port Colborne $\qquad$ |  | \$ cts. | \$ cts. | \$ cts. | nits. |
|  |  | 2804 632 | $\begin{array}{r}1,37196 \\ 493 \\ \hline 68\end{array}$ |  |  |
|  |  | 1200 $3 \quad 72$ | 58800 29628 |  |  |
|  |  | 5008 | 2,74992 6800 |  |  |
| Port Dalhousie ...... | Clark, J. S., Collector for the year... Contingencies. | 2400 | 1,17600 159 37 | 2,817 92 |  |
| Dunnville .............. | Tipton, T. L. M., Collector for the year Contingencies. | 1500 | 73500 1456 | 1,335 37 |  |
| Port Maitland ........ | Galbraith,T. J., Collector for the year Contingencies | $\left\|\begin{array}{r} 694 \\ \ldots \\ \ldots \end{array}\right\|$ | $\begin{aligned} & 49306 \\ & 17250 \end{aligned}$ | 74956 |  |
| Port Robinson ........ | McFarland, D. E., Collector for the year $\qquad$ | 1200 | $\begin{array}{ll} 588 & 00 \\ 160 & 42 \end{array}$ | 66556 |  |
| St. Catharines........ | Clark, J., Collector for the year...... | 404 | $\begin{array}{r} 19596 \\ 2828 \end{array}$ | 74842 | 6,541 07 |
|  | otal, Welland Canal | ...... | ............. | .......... |  |
| St. Lawrence Canals. Beauharnois $\qquad$ | Brossoit, T., Collector for the year... $\qquad$ Contingencies $\qquad$ | $1696$ | $\begin{aligned} & 83304 \\ & 31003 \end{aligned}$ | 1,143 07 |  |
| Oornwall.............. | Phelan, J. A., Oollector for the year..! 1604 Contingencies $\qquad$ |  | $\begin{aligned} & 78396 \\ & 14245 \end{aligned}$ |  |  |
| Montreal............... | $0^{\prime}$ Neil, J., Collector for the year..... Cardinal, R., Clerk, July to January McNally, T., do for the year...... Mongeon, C., Wharfinger, July to 31st <br> May ................................ ....... <br> Pominville, N., Clerk for the year...... <br> Cauchon, A., Clerk, 1st Uct. to 30th <br> June......................................... <br> Bussières, F. do 3rd March to <br> 30th June. $\qquad$ | $\begin{aligned} & 3196 \\ & 1028 \\ & 1761 \end{aligned}$ | $\begin{array}{r} 1,56804 \\ 50582 \end{array}$ | 92641 |  |
|  |  |  |  |  |  |
|  |  | $\begin{array}{ll}11 & 17\end{array}$ | $55048$ |  |  |
|  |  | 1396 | 68604 |  |  |
|  |  | $\begin{array}{r} 1494 \\ 381 \end{array}$ | $\begin{aligned} & 73503 \\ & 18651 \end{aligned}$ |  |  |
|  | Balaries $\qquad$ Contingencies. $\qquad$ | 10373 | 8,097 58 1,946 37 |  |  |
| Lachine ................. | Dyde, J. 8., Collector for the year.... Têtu, F. X., Clerk, March to June.... | $\begin{array}{r} 1798 \\ 532 \end{array}$ | $\begin{aligned} & 88200 \\ & 26132 \end{aligned}$ | 7,043 95 |  |
|  | Salaries $\qquad$ Contingencies. | 2330 $\ldots \ldots . . . . .$. | $\begin{array}{r} 1,14332 \\ 90381 \end{array}$ | 204713 |  |

Appendix B.-No. 2.-Details of Canal Expenditnre, 1875-76.-Continued.


Appendix B.-No. 2.-Details of Canal Expenditure, 1875-76.-Continued.


Appendix B.-No. 3.-Slides and Booms Service.-Details of Expenditure for the Fiscal Year ended 30th June,


|  | 8 <br> O <br> \% <br> $=$ |  | 烒 |
| :---: | :---: | :---: | :---: |
|  |  | Actual Disbursements agreeing with Statement 72 , page 13................................ |  |


APPENDIX B.-Continued
No. 5. - Devails of Cullers' Expenditure for the Fiscal Year ended 30th June, 1876.




No. 7.-Details of Departmental Expenditure.



## Appendix B.-No. 7.-Details of Departmental Expenditure.-Continued.



## APPENDIX B.-Continued.

No. 8.-Details of Sundry Minor Expenditares.---Continued.


Appendix B.-No. 8.-Details of Sundry Minor Expenditures.-Continued.

| To whom Paid. | Service. | $\begin{aligned} & \text { Amount } \\ & \text { Paid. } \end{aligned}$ | Total Amount paid. |
| :---: | :---: | :---: | :---: |
| Edwards, J. B............. $\qquad$ <br> Ellis, W. H <br> do <br> Fraser, R. G. $\qquad$ | Adulteration of Food. <br> Allowance under the Act for apparatus and material used in the Laboratory.. Allowance under the Act for Rent $\qquad$ do Retaining Fee to 30th June, 1876... | \$ cts. | \$ cts. |
|  |  | 30000 |  |
|  |  | 10000 20000 |  |
|  |  | 10000 180 |  |
|  | Allowance under the Aet for apparatus and material used in the Laboratory. | 30000 |  |
|  | do Retaining Fee to 30th June, 1876... <br> Allowance under the Act for apparatus and material used in the Laboratory. | 5833 30000 |  |
| do <br> Larue, F. A. H. <br> Browne, D. <br> Sugg, Wm. <br> Griffin, J. J. \& Sons <br> Queen's Printer |  | 20833 1666 |  |
|  |  | 089 481 | 2,601 83 |
|  | Paid for samples $\qquad$ $\qquad$ Apparatus for testing Sulphur and Ammonia $\qquad$ | 4812345335304 |  |
|  | $\begin{array}{cc}\text { Apparatus for testing Sulphur and Ammonia ......... } \\ \text { do do } & \text { do } \\ \text { do } & \text {... }\end{array}$ |  |  |
|  | Total Adulteration of Food .................... | ........... |  |
|  | Add-Due to Sundry Persons, 1st July, 1875... Grand Total, agreeing with Statement 11 $\frac{1}{2}$, page 19. |  | 7,80573 5021 |
|  |  |  | 7,855 94 |
| A. BRUNEL, Commissioner.$\begin{aligned} & \text { Inlando Revenue Department, } \\ & \text { Ottawa, } 31 \text { st July, } 1876 . \end{aligned}$ |  |  |  |
|  |  |  |  |  |  |  |

APPENDIX $B$.
No. 9.-Dertails of Weights and Measures Expenditure.


Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued.


## Appendix B.-No. 9.-Details of Weights and Measures Expenditure Continued.


A. 1877

Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued.

| To whom Paid. | Service. |  | Amount Paid. | Total. |
| :---: | :---: | :---: | :---: | :---: |
| Davis, A. A....... ......... | Welland. | \$ cts. | \$ cts. | \$ cts. |
|  | Salary as Deputy Inspector, from 27th Oct., 1875, to 30th June, 1876, inclusive.. | 424 | 33576 | 33576 |
|  | Wellington. |  |  |  |
| Swinford, H. H............ | Salary as Deputy Inspector, from 20th Nov., 1875, to 30th June, 1876, inclusive. Contingencies. | 736 | 36097 1023 |  |
|  | York. |  |  |  |
| McCutcheon, Hugh..... . | Salary as Deputy Inspector, from 9th Nov., 1875, to 30th June, 1876, inclusive........ | 773 | 37893 |  |
|  | Beauce Division. |  |  |  |
| Mercier, Jean B............ | Salary as Deputy Inspector, from 27th Dec., 1875, to 30th June, 1876, inclusive | 320 | 25348 |  |
|  | Beauharnois. |  |  |  |
| Dewitt, Charles B......... | Salary as Deputy Inspector, from 25th Oct., 1875, to 30th June, 1876, inclusive | 428 | 33841 |  |
|  | Bellechasse Division. |  |  |  |
| Lamontagne, François.. | Salary as Deputy Inspector, from 30th Oct., 1875, to 30th June, 1876, inclusive | 419 | 33178 |  |
|  | Berthier. |  |  |  |
| Coutu, Alfred............. | Salary as Deputy Inspector, from 28th Oct., 1875, to 30th June, 1876, inclusive | 423 | 33442 |  |
|  | Chambly. |  |  |  |
| Lamoureux, E............. | Salary as Deputy Inspector, from 27th Oct., 1875, to 30th June, 1876, inclusive | 424 | 33576 |  |
|  | Champlain. |  |  |  |
| Cinq-Mars, Honoré A.... | Salary as Deputy Inspector, from 12th Nov., 1875, to 30th June, 1876, inclusive | 397 | 31403 |  |
|  | Drummond. |  |  |  |
| Pacaud, Philippe N...... | Salary as Deputy Inspector, from 8th Nov., 1875, to 30th June, 1876, inclusive | 404 | 31951 | 31951 |

Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued.

| To whom Paid. | Service. |  | Amount Paid. | Total. |
| :---: | :---: | :---: | :---: | :---: |
|  | Gaspé. | \$ cts. | \$ cts. | \$ cts |
| Michaud, Gilbert......... | Salary as Deputy Inspector, from 2nd Nov., 1875, to 30th June, 1876, inclusive | 414 | 32775 | 32775 |
|  | Hull. |  |  |  |
| Quesnel, Adelbert........ | Salary as Depaty Inspector, from 1st Nov., 1875, to 30th June, 1876, inclusive | 416 | 32912 |  |
| Lynch, Patrick........... | Salary as Deputy Inspector, from 3rd Nov., 1875, to 30th June, 1876, inclusive |  | 32638 |  |
|  | Contingencies ......................... | 828 | 65550 5557 |  |
|  | 1berville. |  |  |  |
| Laurier, J. M.............. | Salary as • Deputy Inspector, from 27th Oct., 1875, to 30th June, 1876, inclusive | 424 | 33576 | 335 |
|  | Joliette. |  |  |  |
| Desrochers, J. L. B....... | Salary as Deputy Inspector, from 25th Oct., 1875, to 30th June, 1876, inclusive | 428 | 33840 |  |
|  | Kamouraska. |  |  |  |
| Chamberland, J. O ...... | Salary as Deputy Inspector, from 17th Dec., 1875, to 30th June, 1876, inclusive | 337 | 26675 | 26 |
|  | Labrador. |  |  |  |
| Grenier, Napolćon........ | Salary as Deputy Inspector, from 20th Nov., 1875, to 30th June, 1876, inclusive | 383 | 30306 | 30306 |
|  | Laval. |  |  |  |
| Lalonde, Hector.......... | Salary as Deputy Inspector, from 11 th Nov., 1875, to 30th June, 1876, inclusive | 398 | 31541 | 3154 |
| Lévesque, Arthur........ | Salary as Deputy Inspector, from 25 h Oci., 1875, to $\mathbf{B}^{1}$ th, June, 18i6, inclusire | 428 | 33841 | 33841 |
|  | Lotbinière. |  |  |  |
| De St. George, H. Q....... | Salary as Deputy Inspector, from 1st Nov., 1875, to 30th June, 1876, inclusive | 416 | 32912 |  |

Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued


Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued.
 Continued.


## Appendix B.--No. 9.-Details of Weights and Measures Expenditure. Continued.



## Appendix B.-No. 9.-Details of Weights and Measures Expenditure.Continued.



APPENDIX B.-Continued.
No. 10.-Details of Gas Inspection Expenditure.


Appendix B.-No. 10.-Details of Gas Inspection Expenditure.-Continued.


## A. BRUNEL, <br> Commissioner.

Inland Revenue Department, Otrawa, 31st July, 1876.

No. 11.-Weights and Measures-Special Account.


## A. BRUNEL, <br> Commissioner.

Inland Revenue Department, Ottawa, 31st July, 1876.

APPENDIX C .

## HYDRAULIC AND OTHER RENTS.

Dr.


## DIX $\mathbf{c}$.

Lessees' Accounts, 1875-76.
Cr.

| Description of Property. |  |  |  | 茄 | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \$ cts. | $\$$ cts. | \$ cts. |
| A.-North Chaudière Street-Service Ground |  |  |  |  |  |
| B.C.- do do ... | June 30, 1876 |  |  | 6,601 02 | 6,601 02 |
| D.-Saw Mill, do ......................... | do 30, 1876 |  |  | 1,040 00 | 1,040 00 |
| E.F.G.-Service Mill .................................. | do 30, 1876 |  |  | 4,260 00 | 4,260 00 |
| B.I.J.-Grist Mill, South Head Street............ | Oct. $1,1876$. |  |  | 4,42637 | 4,426 37 |
| K.-Fanning Mill, do ........... | Nov. 1, 1876\|. |  |  | 1,440 00 | 1,440 00 |
| L.-Service Ground do ........... | do 1, 1876. |  |  | 1,480 00 | 1,480 00 |
| Q.R.T.-Service Ground, North Middle Street | Oct. 1, 1876 |  |  | 4,320 00 | 4,320 00 |
| S.-Foundry, North Middle Street................ | do 1, 1875 |  | ... | 1,440 00 | 1,440 00 |
| U.V.X.Y.Z.--Service Ground | do 1, 1876. |  |  | 8,400 00 | 8,400 00 |
| Small Island, Du Chêne Rapid | Jan. 1, 1876 |  |  | 8, 1200 | 8,400 1200 |
| Water Lot, Calumet Island......................... | June 30, 1876. |  |  | 6000 | 6000 |
| East Portion Hawley's Island | do 30, 1876. |  | .................. | 28000 | 28000 |
| Workshops, \&c., three acres. .................... | Sept. 1, 1876 | ... | 18000 |  | 18000 |
| Bridge over Slides ............. ...................... | June 30, 1876. |  | 1000 | 1000 | 2000 |
| Two strips of land, Victoria Island............... | Dec. 31, 1876 |  | 20000 |  | 20000 |
| One strip of land, Amelia Island. ................. | Jan. 1, 1877 |  | 10000 |  | 10000 |
| Water Lots............................. ................ | Dec. 1, 1876 | . | 5000 |  | 5000 |
| Two strips of land .................................. | Sept. 1, 1876 | . |  | 15000 | 15000 |
| Strip of Ordnance Property, foot of Major's | June 30, 1876 |  | 2000 |  | $20{ }^{\circ} 00$ |
| M.N.O.P.-Service Ground, 2 roods or $\frac{1}{2}$ acre.. | June 30, 1876 |  |  |  |  |
| Lot at base of Major's Hill......................... | May 1, 1877 |  |  | 100 | 100 |
| Three small Islands opposite Lot No. 33, Concession $A$. $\qquad$ $\qquad$ | $\text { do } 1,1877$ |  | 2400 |  | 2400 |
|  |  |  | 58400 | 33,920 39 | 34,504 39 |
| Land, Isthmus, Lock Station ....................... |  |  |  |  | 600 |
| Lease of front of sub-lot No. 5 , Concession B, | April 1, 1876 |  | 300 | 300 | 600 |
| Water R front......................................... | Dec. 31, 1876 |  |  | 200 | 200 |
| Maill | June 30, 1876 |  | 36000 | 18000 | 54000 |
| Water ${ }^{\text {d, }}$, No. 9 Long Island........i | June 30, 1876 |  | 15000 | 2500 | 17500 |
| Water Power, Brewer's Lower Mills. | do 30, 1876\| |  | 10500 | 5250 | 15750 |
| Water Power, Brewer's Upper Mills. | do 30, 1876 |  | 16100 | 8050 | 24150 |
| Grater Lot, Edmund's Mill Lock................... | do 30, 1876 |  |  | 1,007 00 | 1,007 00 |
| Wround to pile wood, Merrickville................ | do 30, 1876 |  |  | 24300 | 24300 |
| Water Lot at Johnston's Lock, Davis Station.. | do 30, 1876 |  |  | 21000 | 21000 |
| Right of Way and Lots 8 and 9, Dow's Swamp. | Dec. 31, 1876 |  | 2500 | 2500 | 5000 |
| Wing Ground, Green Island........................ | do 31, 1876 |  |  | 32000 | 32000 |
| - Orner Lot, A.B., Old Sly's Station | May 1, 1876 |  |  | 2,940 00 | 2,940 00 |
| Gromental Grounds, Merrickville | do 1, 1876 |  |  | 24000 | 24000 |
| Ground to pile wood, Merrickville.................. | Dec. 31, 1876 |  | 1200 | 1200 | 2400 |
| Lot for Bridging purposes. | do 22,1875 |  |  | 46000 | 46000 |
| Leas to build Bridge, Nicholson's Lock, $\$ 1$ rent Lease of part Lot No. 1, 4th Concession, Smith's Falls |  |  |  |  | 60 |


|  |  |  | Totals. | Name of Work. | Present Occupant. | Orginal Lessee. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\$$ cts. | \$ cts. | \$ cts. | \$ cts. |  |  |  |
| $500$ | 500 |  | 1000 | Rideau Canal \& River.-Cont' ${ }^{\prime}$ | Alfred Chester. |  |
| 1000 | 1000 |  | 2000 | do | Jesse Minar. |  |
| 1000 | 1000 | .............. | 2000 | do ... | Stafford Merryfield...... |  |
| .............. | 300 | .............. | 300 | do ... | John Heney.............. |  |
| .............. | 1350 |  | 1350 | do ... | Mrs. H. Patterson....... |  |
|  | 100 |  | 100 | do | John Graham............ |  |
|  | 1100 |  | 1100 | do ... | Michael Kilroe............ |  |
|  | 1000 |  | 1000 | do | John Blair................. |  |
|  | 1100 | .............. | 1100 | do ... | William Powell. |  |
|  | 600 |  | 600 | do | Daniel Delaney |  |
| . | 375 | ............... | 375 | do ... | George Richey... ........ |  |
| . | 225 |  | 225 | do ... | D. Cameron.............. |  |
| .............. | 975 |  | 975 | do | George Morris........... |  |
| .............. | 1125 |  | 1125 |  | Thomas Paget........... |  |
|  | 825 |  | 825 |  | Phillip Kennedy......... |  |
| .. | 300 |  | 300 | do ... | Thomas May.. |  |
| 5,066 90 | 1,693 45 | ..... ........ | 6,760 35 |  |  |  |
| 12300 | 24600 |  | 36900 | Williamsburg Canal. | William Gibson......... | Benj. Chaffey .... |
| 7000 | $14000$ |  | 21000 | do <br> ....... | Bailey \& Mills.............. | William Elliott |
| 14000 | $14000$ |  | $28000$ | do | J. Cameron. | J. Molson, jun... |
| 2,400 00 | $16000$ |  | $2,56000$ | do | W. T. Benson.............. | Benson \& Aspden |
| 1,260 00 | 14000 |  | 1,400 000 | do $\qquad$ | George Stephen | Philip Carmen... |
| 44000 | 4400 |  | 8800 | do | Patrick Walsh.............. | John Walsh...... |
| 600 | 1200 |  | 1800 | do | Lawrence Byrne........... | Wm. S. Aiken... |
| .............. | 2400 |  | 2400 | do ....... | K. McPherson............. | McLaughlin and McPherson..... |
| 2400 | 1200 |  | 3600 |  | W. T. Benson ..... ..... |  |
| .............. | 2000 | ............ | 2000 | do | N. M. Davy............... | William Bailey... |
| $\left\lvert\, \begin{array}{r} 1 . \ldots . . . . . . . . . . \\ 400 \end{array}\right.$ | 24 200 200 |  | 24 600 600 | do <br> ...... | Jacob H. Ross............ | Wm. S. Aiken ... |
|  | 200 |  | 600 | do ...... | Trustees' School, Section No. 4 |  |
| 4,071 00 | 96400 |  | 5,035 00 |  |  |  |
| 70000 | 24000 |  | 94000 | Cornwall Canal. | Andrew Hodge........... | H. Elliott......... |

Lessees' Accounts, 1875-76.-Continued.
Cr.

| Description of Property: |  |  |  |  | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \$ cts. | \$ cts. | \$ cts. |
| Part of Lot No. 3, Concession B., Township of <br> Wolford | June 30, 1876 |  | 1000 |  | 1000 |
| Part of Lot No. 2, Concession E., Township of W olford |  |  |  | 1000 | 2000 |
| Lot No. 4, Concession 1, Township of Oxford.. | do 30, 1876 . |  | 1000 | 1000 | 2000 |
| Reserve at Deep Cut, Ottawa...................... | Sept. 1, 1876 |  |  | 300 | 300 |
| Reserve in front of her Lot, South $\frac{1}{2}$ Lot G., Concession C, Township of Nepean............. | Jan. 1, 1877 |  | 1350 |  | 1350 |
| Reserve in front of North $\frac{1}{2}$ Lot G., Concession C., Township of Nepean... | $\text { do } 1,1877 \text {. }$ |  | 100 |  | 100 |
| Reserve in front of North $\frac{7}{2}$ Lot 8 , 1st and 2 nd Concession, Township of Nepean. | do 1, 1877. |  |  |  | 1100 |
| Part of North $\frac{1}{2}$ Lot No. 6, 2nd, Concession <br> Nicholl's Island. | Dec. 1, 1876 |  |  |  | 1000 |
| Part of Reserve in front of Lot No. 5, 2nd Concession, Nicholl's Island | $\text { do } 1,1876 \text {. }$ |  |  |  | 1100 |
| Part of Reserve in front of South $\frac{1}{2}$ Lot No. 8 <br> 2nd Concession, Nepean. | $\text { do } 1,1876$ |  |  | 600 | 600 |
| Part of Reserve in front of Lot No. 1, 2nd Concession, Nepean. |  |  | 375 | 6..... | 375 |
| Part of Reserve in front of North $\frac{1}{2}$ Lot 23, <br> Township of Gloucester. | $\text { do } 1,1876$ |  | 375 | 225 | 225 |
| Part of Reserve in front of South $\frac{1}{2}$, Lot 5 , in 2nd Concession, Nepean. | Dec. 31, 1876 |  |  | 975 | 975 |
| Part of Reserve in front of North $\frac{1}{3}$, Lot 4, in 2nd Concession, Township of Nepean.. | do 31, 1876 |  |  | 1125 | 1125 |
| Part of Reserve in front of South $\frac{1}{2}$, Lot 6, in 2nd Concession, Township of Nepean... | $\text { do } 31,1876$ |  |  | 825 | 825 |
| Part of Reserve in front of South $\frac{1}{2}$ of Lot 23, Rideau Front, Gloucester | do 31,1876 |  | 300 |  | 300 |
|  |  |  | 89925 | 5,861 10 | 6,760 35 |
| Grist Mill, Mill Street, Williamsbur | June 30, 1876 |  | 24600 | 12300 | 36900 |
| do Matilda Lock, Rapide Plat...... ..... | do 30,1876 |  | 14000 | 7000 | 21000 |
| Sto do do do ........... | do 30,1876 |  | 21000 | 7000 | 28000 |
| Warch Factory, part Lot No. 5, Edwardsburg | do 30, 1876 |  |  | 2,560 00 | 2,560 00 |
| Water for Tannery, Edwardsburg ................ | do 30, 1876 |  |  | 1,400 00 | 1,400 00 |
| Wharf Lot, Rapide Plat..... ........................ | April 1, 1876 |  |  | 8800 | 8800 |
| Wharf Lot, Galops Canal........................... | June 30, 1876 | . |  | 1800 | 1800 |
| Pesto do ........................ | April 1, 1876 |  |  | 2400 | 2400 |
| Pasture Ground, Galops Canal | $\text { Mar. } 1,1876$ |  | 1200 | 2400 | 3600 |
| Wha.:" Lot, Basin, Lock No. 5 | $\text { Aug. } 1,1876$ |  |  | 2000 | 2000 |
| do Point Iroquois........................... | Dec. 1, 1876 |  |  | 2400 | 2400 |
| Bchool House, Matilda | May 1, 1877 |  |  | 600 | 600 |
|  |  |  | 60800 | 4,427 00 | 5,035 00 |
| Flour and Grist Mill, Hydc.Lots 3 \& 4,Cornwall | June 30, 1876 | ...... ..... |  | 94000 | 94000 |

Dr.
Hydraulic and other Rents, \&c.-

C.-Continued.

Lessees' Accounts, 1875-76.-Continued
Cr.


Dr.
Hydraulic and other Rents, \&c.-

|  | ? |  | Total. | Name of Work. | Present Occupant. | Original Lessee. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{cc} \$ & \text { cts. } \\ 1000 \end{array}$ | $\begin{array}{ll} \$ & \text { cts. } \\ 10 & 00 \end{array}$ | $\left\lvert\, \begin{array}{rr} \text { \$ } & \text { cts. } \\ \ldots . . . . . . . . . . . ~ \end{array}\right.$ | $\begin{array}{ll} \$ & \text { cts. } \\ 20 & 00 \end{array}$ | $\begin{array}{\|l\|} \text { Lachine Canal-\| } \\ \text { Continued.......\| } \end{array}$ | Moseley \& Lewis |  |
| 12000 | 4000 |  | 16000 | do .... E | E. O. Lesperance. | Estate of J. Levy |
| 27,807 00 | 2,418 00 | .............. | 30,225 00 |  | W. P. Bartley, Peck \& McDougall | W. Bartley |
| ... | 3000 |  | 3000 60 |  | Henry Shackell \& Co.. | Henry Shackell. |
|  | 60.00 |  | 6000 |  | Montreal and Ottawa Forwarding Co........ | M. K. Dickinson. |
| 20000 | 20000 |  | 40000 | do .... J | J. W. McGauvran ...... |  |
| 1,512 00 | 1,296 00 |  | 2,808 00 | do ....i | Fstate Ira Gould........ | Ira Gould .......... |
| 2,330 50 | 1,601 00 |  | 3,931 50 | do $\quad .$. |  | Wm. Parkyn .... |
| 6......... | 1100 |  | 100 700000 | do .... | Dom. Telegraph Co..... |  |
| 6,000 00 | 1,00000 | .............. | 7,000 00 | do .... ${ }^{\text {do }}$ | B. Grant \& T. Leitch .. | Geo \& Wm. Tait |
| 19600 | 39200 | .............. | 58800 | do ....\| | Frothingham \& Workman |  |
| 13200 | 26400 |  | 39600 | do .... | H. McLennan .............. | Frothingham \& Workman ..... |
|  | 43000 |  | 43000 | do .... | Peck, Benny \& Co...... | Estate J. Harvey |
| 5000 | 10000 | .............. | 15000 |  | Montreal Transportation Company | Augustus Lable.. |
|  | 70000 |  | 70000 | do ... | Montreal Warehousing <br> Co. <br> ........................ | Thomas Cramp, |
| 2000 | 1000 | .............. | 3000 | do ... | Montreal Passenger Railway Co.. ....... | President ..... |
| 70000 |  |  | 70000 | do ... |  | John Ostell ...... |
| 28800 |  |  | 28800 | do |  | Francis Doré .... |
| 2,896 67 |  |  | $\begin{array}{r}2,89667 \\ 57 \\ \hline\end{array}$ | do do ... |  | Wm. Tait ........ |
|  | 5770 |  |  |  | Lake St. Francis Navigation Co. $\qquad$ |  |
| 44,417 17 | 13,674 70 |  | 58,091 87 |  |  |  |
| 2,31650 100 | 5650 5000 |  | 2,373 1500 150 | Chambly Canal.. do | Jason Pierce \& Son..... M. S. Willet | Willet\& McPher- |
| 10000 | 5000 | \|..... ........ |  |  |  | Willetd McPher- son .............. |
| 2400 | 1200 |  | 3600 | do ... | Jos. A. Maurice ........ |  |
| ............. | 500 |  | 500 50 | do | J. A. Maurice............. |  |
|  | 5000 |  | 5000 10000 |  | St Cohn's Stone Chins- |  |
|  | 10000 |  | 10000 |  | St.John's Stone China- |  |
|  | 10000 |  | 10000 | do ... | Ottawa and Rideau Forwarding Co....... |  |
| 2,44050 | 37350 |  | 2,814 00 |  |  |  |
| 12000 |  |  | 12000 | $\left\lvert\, \begin{gathered} \text { Trent River } \\ \text { Works ........... } \end{gathered}\right.$ |  | E. W. Henderson |
| 2000 | 4000 |  | 6000 | do .. | James Cummin |  |
| 850 | 100 |  | 950 | do | M. B. Roblin . | .... |
| 14800 | 4100 |  | 18950 |  |  |  |

40 Victoria

## C．－Continued．

Lessees＇Accounts，1875－76．－Continued．
Cr．

| Description of Property． |  |  | む̈ <br> 思 $\begin{aligned} & \text { 号 } \\ & \text { 気 } \\ & \text { 品岕 } \end{aligned}$ <br> م |  | Total． |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄cts． | \＄cts． | \＄cts． | \＄cts． | \＄cts． |
| Three－inch Pipe，Grand Trunk Crossing Ground near Tait＇s Dock $\qquad$ | Oct．1， 1876 |  | 1000 | 1000 | 2000 |
|  | Feb．15， $187{ }^{\text {c }}$ |  |  | 16000 | 16000 |
| Furnishing Shop，Mills on Concession Lots <br> $\frac{1}{2}, 2$ ；also 3，4，5， 6 and 7，Basin No． 2. <br> Freight Shed，Basin No． 1 |  |  |  |  |  |
|  | June 30， 1876 |  |  | 30，225 00 | 30，225 00 |
|  | May 1， 1877 |  | 3000 | 30，225 00 | 30 00 |
| do do | May 1， 1877 |  | 6000 |  | 6000 |
| Lot of Ground near St．Gabriel＇s Lock | June 30， 1876 |  | 20000 | 20000 | 40000 |
| W our Mill，12， 13 and 14 Basin．．．．．．．．．．．．．．．．．．．．．． | April 1， 1876 |  | 1，296 00 | 1，512 00 | 2，808 00 |
| Parer Power，Côte St．Paul＇s Locks ．．．．．．．．．．．．． | June 30， 1876 |  | 1，601 00 | 2，330 50 | 3，931 50 |
| Ory Dission to erect Office on Bank of Canal．．．．． | June 30， 1876 |  | 100 |  | 100 |
| Ory Dock and Ship Yard Basin．．．．．．．．．．．．．．．．．． | June 30， 1876 |  | 1，000 00 | 6，000 00 | 7，000 00 |
| Warehouse and Coal Yard，Lot No．1，Basin <br> No． 2 ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |
|  | June 30， 1876 |  | 39200 26400 | 19600 13200 | 58800 39600 |
|  | May 1， 1876 | ．．．．．．．．．．．．． | 26400 430 | 13200 | 39600 43000 |
| Karine Slip，IslandeNo． 5 | June 30， 1876 |  | 10000 | 5000 | 15000 |
| Land Basin No． 4 | Aug．1， 1876 |  | 70000 | ．．．．．．．．．．．．． | 70000 |
| Track across Canal at Oóte St．Paul．．．．．．．．．．．． | June 30， 1876 |  |  | 3000 | 3000 |
| Wharf Basin，Island ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | do 1858 |  |  | 70000 | 70000 |
| Oak Lorf and Land，Lachine | do 1861 |  |  | 28800 | 28800 |
| Sh Lock，lower entrance | Feb．， 1861 |  |  | 2，896 67 | 2，896 67 |
|  | May 1，1877 | ．．．．． | 5770 |  | 5770 |
|  |  |  | 11，206 70 | 46，885 17 | 58，091 87 |
| Lot of Ground，St．Johns | Jan．1， 1876 | 2，253 00 | 12000 |  | 2，373 00 |
| Wharf Lot and Store at Lock No．4，Chambly． Lot near upper entrance to Lock No． 7 | $\text { June 30, } 1876$ |  |  | 15000 |  |
|  | do 30， 1876 |  |  | 13600 | 3600 |
| A near upper entrance to Lock No．7．．．．．．．．．．． <br> Whare of Land on west side of Canal．．．．．．．．．．． | May 1， 1877 |  |  | 500 | 500 |
| Ground， $100 \times 75 \mathrm{ft}$ ．，at south end of Wharf， <br> Whentrance Chambly Canal，at St．Johns ．．． | June 30， 1876 |  | 5000 |  | 5000 |
|  | $\begin{aligned} & \text { do } 30,1876 \\ & \text { do } 30,1876 \end{aligned}$ |  | 10000 | 10000 | $\begin{aligned} & 10000 \\ & .0000 \end{aligned}$ |
|  |  | 2，253 00 | 27000 | 29100 | 2，814 00 |
| Pumping Engine，Scugog Works $\qquad$ <br> But at Lock，Chisholm＇s Rapids ．．．．．．．．．．．．．．．．．．．． <br> ourplus Water，near Village Frankfort．． | 1 1061 |  |  |  |  |
|  | June 30， 1876 |  |  | 6000 | $\begin{array}{r}60 \\ 60 \\ \hline 180\end{array}$ |
|  | Dec．31， 1876 |  |  | 950 | 950 |
|  |  |  |  | 18950 | 18950 |


|  |  |  | Total. | Name of Work. |  | Present Occupant. | Original Lessee. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ cts. | \$ cts. | \$ cts. | \$ cts. |  |  |  |  |
| 9365 | 18730 |  | 280951 | Welland Ca |  | R. \& J. Laurie........... | Robert Laurie ... |
| 24000 | 24000 | ........... | 480001 | do |  | Syivester Neelan ........ | R. \& J. Laurie ... |
| 2000 | 2000 | ..... | 40001 | do |  | do | do |
| 36000 | 8000 | .... ........ | 44000 | do |  | George A. Clark........ |  |
| 9000 | 2000 | ............. | 11000 | do |  | do ${ }^{\text {dor }}$....... | ........ ............. |
| 8800 | 17600 | .......... | 26400 | do |  | Alexander Muir.... .... |  |
| 40000 | 10000 | ............ | 50000 |  | ... | Andrews \& Son.......... | Donaldson, Andrews \& Ross.. |
| 48400 | 12100 | ........ | 60500 | do |  | Donaldson, Andrews \& Ross | Reuben Morrison |
| 9000 | 2000 |  | 11000 | do |  | Geo. A. Clark.......... | Jas. Mavor........ |
| 2,600 00 | 26000 |  | 2,860 00 | do |  | Tuttle, Date ${ }^{\text {a }}$ Rodden | John L. Ranney .. |
| 15000 | 15000 | ............ | 30000 | do |  | S. Neelan ................ | Calvin Phelps ... |
| 4000 | 4000 | ............ | 8000 | do |  | Norris \& Neelan ........ | do ... |
| 95810 | 8710 | ... .. ...... | 1,045 20 | do |  | W. H. Merritt, jun...... |  |
| $1000 \mid$ | ${ }^{-10} 00$ |  | 2000 | do |  | Michael Kerrins.......... |  |
| 8383 | 16766 | ............. | 25149 | do |  | Gillespie \& Simpson.... | R. Collier ........ |
| 28000 | 14000 | ............... | 42000 | do |  | Jas. Willcox ............. | Thomas Towers.. |
| 480001 | 16000 | $\cdot$ | 64000 | do |  | Wait \& Dolan............ | John Brown ...... |
| 1,629 00 | 18100 |  | 1,810 00 | do |  | W. B. Hendershot........ |  |
| 21630 | 21600 | ............ | 43200 | do |  | Beatty \& Son............. | Wm. Beatty ..... |
| 12720 | 6360 | ............ | 19080 | do |  | Wm. Beatty ................ |  |
| 2500 | 5000 | .............. | 7500 | do |  | J. McDonagh.............. | W. H. Ward .... |
| 36500 | 14600 | .............. | 51100 | do |  | do $\ldots$........... | do ..... |
| 48000 | 24000 | ............... | 72000 | do |  | Gordon \& MacKay...... |  |
| 4000 | 4000 | .............. | 80001 | do |  | John Brown............ | $\cdot$ |
| 8000 | 8000 | .............. | 16000 | do |  |  |  |
| 77700 | 22200 | ............... | 99900 | do |  | Peleg Howland .......... | Jacob Keefer..... |
| ${ }^{650} 00$ | 13000 | .............. | 780 <br> 860 | do |  | Brown \& Band............. | Brown \& Ross.... |
| 2,400 00 | 16000 | .............. | 2,560 00 | do |  | Woodward Estate ...... | Alex. Christie ... |
| 1,350 60 | 7920 | .............. | 1,429 801 | do |  | J. and J. Abbey ........ | $\begin{array}{\|c} \text { Macfarland } \\ \text { Abbey ........... } \end{array}$ |

## C.-Continued.

Lessees' Accounts, 1875-76.-Continued.
Cr.

| Description of Projerty. |  |  |  | Total. |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ cts. | \$ cts. | \$ cts. | \$ cts |
| Grist Mill, Waste Weir No. | June 30, 1876 |  |  | 28095 |
| Serchant's Mill do | do 30, 1876 | 24000 | 24000 | 48000 |
| Lot Land <br> do | do 30,1876 | 2000 | 2000 | 4000 |
| Wharf Lot, Port Dalhonsie, East Side Piers.... | June 30, 1876 | , | 440 110 00 | $44000$ |
| Docks at ${ }_{\text {dord }}$ do do do Lock No. $1 . .1$ | do 30,1876 do 30,1876 | 600 | 110 88 88 | 26400 |
| Dry Dock, do part of Lock No. 1, Ist Concession, Granthau. | do 30, 1876. |  | 5:000 | 50000 |
| Naw Mill, Port Dalhousie, water for three saws, | do 30, 1876 |  |  |  |
| Lot ate Weir No. 1........................... ........ | do 30, 1876........... | ....... |  | 60500 110 |
| Union Mill, do dousie, near Lock No. lo No........ | do 30, 1876............ |  | - 11000 |  |
| $\begin{array}{ll}\text { Merchants' Red Mill, } & \text { do do } \\ \text { do } \\ \text { No. } \\ \text { di........... }\end{array}$ |  | 135 225 00 | 2,72500 7500 | $\begin{array}{r}2,860 \\ 300 \\ \hline\end{array}$ |
| Wharf Lot, Port Dalbousie, do No. 4.......... | do 30, 1876 | 6000. | 2000 | 8000 |
| Paw Mill, Allanburg................................... | do 30, 1876 | ..............i | 1,045 20 | 1,045 20 |
| Sece of Ground, Lock No. 2......................... | do 30, 1876 | 1000 | 1000 | 2000 |
| Gris Mill, do No. 2. ...................... | do 30, 1876 |  | 25149 | 25149 |
| Cerist Mill, do No. 2......................... | do 30, 1876 | 14000 | 28000 | 42000 |
| Saw Mill Mill and Stave Factory, Lock No. 15..\| | do 30, 1876\|.. | ....... | $\begin{array}{r}640 \\ \hline 180 \\ \hline 810\end{array}$ | 640 1.81000 |
| daw Mill, Lock No. 20 | do 30,1876 |  | $\begin{array}{r}1,810 \\ 21600 \\ \\ \hline 1600\end{array}$ | $\begin{array}{r}1,810 \\ 43200 \\ \hline 00\end{array}$ |
| Tannery, do No No. 22 | do 30,1876 do $30,1876 .$. | 216 <br> 127 <br> 10 |  |  |
| Pactory, do No. 22 | do $30,1876 .$. do $30,1876$. | 12720 | 63 7500 750 | 19080 7500 |
| Cow Mill, do No 23 | do 30, 1876 |  | 51100 | 51100 |
| Wotton Factory, Locks No. 12, 13, 14 | do 30,1876 | 480001 | 24000 | 72000 |
| Plaster Lot and Storehouse, Lock No. 23......... | do 30, 1876 |  | 8000 | 8000 |
|  | do 30, 1876 |  | 16000 | 16000 |
|  | do 30, 1876 |  | 99900 | 99900 |
| Grist Mill Mils, No. $24 . . . . . . . . . . . . . . . . . . . . . . . . . ~$ | do 30, 1876 ........... | ......... | 78000 | T8. 00 |
| Qrist Mill, do No. $25 . . . .$. ...... ............ | do 30, 1876 | .. ...... | 2,560 00 | $2, \mathrm{~L} 000$ |
| Dry Dock, Port Ro | do 30, 1876 |  | 1,429 80, | 1,429 80 |



C．－Continued．
Lessees＇Accounts，1875－76．－Continued．
Cr．

| Description of Property． |  |  |  |  |  | Total． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \＄cts． | \＄cts． | \＄cts． | \＄cts． | \＄cts． |
| Saw Mill，Port Robinson | June 30， 1876 | ．．．．．． |  | ．．．．．．．．．．＇！ | 1，000 00 | 1，000 00 |
| Grist Mill，do ．．．．．．．．．．．．．．．． | do 30,1876 |  |  |  | 58050 | 58050 |
| Shido Allanburg．．．．．．．．．．．．．．．．．．．． |  |  |  |  | 3，518 77 | 3，518 77 |
| Shingle Factory，Allanburg．．．．．．．．．．．．． | do $30,1876$. |  |  |  | 72000 | 72000 |
| Grist Mill，Port Robinson．．．．．．．．．．．．．．．．．．． | do 30， 1876 ． |  |  | 2000 | 4000 | 6000 |
| do do ． | do 30， 1876 | 55932 | 9300 |  | 37768 | 1，030 00 |
| Saw Mill，Merrittville． | do 30，1876 | 52000 | 20800 |  | 20800 | 93600 |
| Grist Mill，do ．．．．．．．．．．．．．．．．．．．．．．．． | do 30， 1876 | 54000. | $1800 \hat{0}$ |  | 38400 | 1，104 00 |
| Storehouse and Wharf，Aqueduct， Merrittville．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | do 30,1876 |  |  |  | 14000 | 14000 |
| Grist Mill，Merrittville．．．．．．．．．．．．．．．．．．．．．． | do 30，1876 | 73600 | 16000 |  | 25600 | 1，15200 |
| Wharf Lot，Port Colborne．．． | do 30， 1876 |  |  | 3750 |  | 3750 |
| Weond Elevator，do ． | do 30， 1876 |  | ．．．．．．．．．．．． | 2000 | 2000 | 4000 |
| Wood Yard，do | do 30， 1876 |  |  | 5000 |  | 5000 |
| Grist Mill，Marshville． | do 30，1876 | 93334 | 13332 |  | 10668 | 1，173 34 |
| Oaw Mill，Broad Creek | do 30， 1876 |  | 11915 |  | 48463 | 60378 |
| Wrist Mill，Durnville．．．．．．．．．．．．．．．．．．．．．． | do 30， 1876 | 12000 | 9000 | ．．．．．．．．．．．． | 45000 | 66000 |
| Wharf Lot at Merrittville，part of | do 30， 1876 |  |  |  | 14115 | 14115 |
| Wharf Lot，Merrittville．．．．．．．．．．．．．．．．．．．．．．．．． | do 30， 1876 |  |  |  | 15130 | 15130 |
| Gro Half Lots at Merrittvill | do 30，1876｜ |  |  |  | 17500 | 17500 |
| Grist Mill，Dunnville．．．．．．．．．．．．．．．．．．．．． | do 30,1876 | 31781 | 4334 |  | 12999 | 49114 |
| Carding Machine，Dunnville．．．．．．．．．．． | do 30， 1876 | 19558 | $2667$ |  | 8001 ， | 30226 |
| Sapp Mills， | do 30，1876 |  |  |  | 24748 | 28615 |
| do <br> do | do 30， 1876 | 2314 |  |  | 34668 | 50850 |
| Mo Haldimand．．．．．．．．．．． | do 30， 1876 |  |  |  | 3，217 5！ | 3，217 59 |
| $S_{n T}$ chants，Lock No． 21 | do 30，1876 |  |  |  | 2，480 u0 | 2，480 00 |
| Two Wh，Dunnville．．．．．．．．．．．．．．．．．．．．．． | do 30， 1876. |  |  |  | 366 67 | 36667 |
| Wharf Lots，Merrittville | $\text { do } 30,1876$ |  |  |  | 5000 | 5000 |
| Grister Mill，Dunnville | June 30， 1866 | 41433 | 5650 | ．．．．．．．．．．．．． | 16949 | 64032 |
| Sapt Mill，Haldimand ．．．．．．．．．．．．．．．．．．．． | do 30，1876｜ | 638 92 | 7667 |  | 20445 | 92004 |
| Ground near George A．Clark＇s．．．．．．．．． | do 30,1876 do 30,1876 |  | ．．．．．．．．．．．．．． | 2000 | 12000 | 3000 12000 |
| Cotton Factory，Lock No． 24 | $\text { do } 30,1876 \text {. }$ |  |  | ．．．．．．．．．．．＇ | 80000 | 80000 |
| Water Power， 3 to 11 <br> Old | $\text { do } 30,1876$ |  |  | 56060 | 25000 | 75000 |
| Old Saw and Grist Mill，Allanburg．．． | $\text { do } 30,1876$ |  | ．．．． | ．．．．．． | 1，500 00 | 1，500 00 |
| Paper Factory，Lock No．17．．．．． |  |  |  | $10000^{\prime}$ | 20000 | 30000 |
| Maning Machine，do 20. | do－30， 1876 |  |  |  | 30000 | 30000 |
|  | do 30， 1876. |  |  | 12000 | 24000 | 36000 |
| Lot do do 23．．．．．．．．．．．．．． | do 30， 1876 |  |  | 16500 | 5500 | 22000 |
| $\mathrm{S}_{\text {torehouse，Port }}$ Aqueding Welland．．．．．．．．．．．．．．． | do 30， 1876 |  | ．．．．．．．．．． | 16.7 | 77000 | 77000 |
| Wharf Lot，Lock No． 3 | $\begin{aligned} & \text { do } 30,1876 \\ & \text { do } 30,1876 \end{aligned}$ |  |  | 16 0000 | 1200 2000 | 2800 4000 |

Dr.
Hydraulic and other Rents, \&c.-


Lessees' Accounts, 1875-76.-Continued.
Cr


|  |  | Total. | Name of Work. | Name of Proprietor. |
| :---: | :---: | :---: | :---: | :---: |
| \$ cts. | \$ ets. | \$ cts. |  | Land Salie-Principal Accoint. |
| 2,536 87 |  | 2,536 87 | Lachine Canal........ .... | Estate Philippe Turcotte, now R.A.R Hubert |
| 43334 | ........... | 43334 | Bonner's Rents, Quebec. | Timothy Sullivan, now Michael Murphy...... |
| 33334 | .... .......... | 33334 | do do ... | John Baily, now Alex. Powell.. .... ........... |
| 30000 | ... | 30000 | do do ...! | Abraham Thompson ............ .................. |
| 14780 | . | 14780 | do do ... | John Boomer....... ....................... ...... |
| 24840 | .... | 24840 | do do ... | John Gariatz, now J. C. Nolan................. |
| 15480 | .............. | 15480 | do do ... | N. H. Bowen.... ............................. ...... |
| 60000 | ..... ........ | 60000 | do do ... | Estate Robsrt Reed................................ |
| 33333 | ...... ....... | 33333 | do do ... | Jean Chevalier ...................................... |
| 6300 | .............. | 6300 | do do ... | Thomas Mc Adam . .................. . ............... |
| 53333 | .............. | 53333 | do do ... | Daniel Holden....................................... |
| 333 10 | . ...... ..... | $\begin{array}{r}333 \\ \hline 10\end{array}$ | $\xrightarrow[\text { do }]{\text { do }}$ do. | George Creeley.................................... |
| 10,32960 450 | .... | 10,32960 450 | Great Cranberry Marsh. Water Lot.. .......... .... | Municipality County Welland. ................. |
| 10,392 83 | . | 10,392 83 | H. \& P. D. Road........... | Choat \& Kern (matured).............................. |
| 1,700 00 |  |  |  | do (yet to mature) .................. |
| .............. | $\begin{array}{\|r} 16,98750 \\ 8,09712 \end{array}$ | $\begin{array}{r} 16,98750 \\ 8,097 \\ 12 \end{array}$ | Montreal do ............................ | Harbour Commissioners of Montreal The Corporation of Montreal |
| 28,889 97 | 25,084 62 | 53,974 59 |  |  |
|  |  |  |  | Land Sales-Interest Account. |
|  |  | 1,633 23 | Lachine Canal ........... | Estate P. Turcot, now R. A. R. Bubert..... |
| 42800 | 2600 | 45400 | Bonner's Rent, Quebec.. | Timothy Sullivan, now Michael Murphy...... |
| 8000 | 2000 | 10000 | do do ... | John Bailey, now Alex. Powell.................. |
| 5400 | 1800 | 7200 | do do ... | Abraham I'hompson .............. ................ |
| 3104 | 887 | 3991 | do do ... | John Boomer .................. ...................... |
| 6708 | 1491 | 8199 | do do ... | John Garbatz, now J. C. Nolan .. ........ ..... |
| 7889 | 929 | 8818 | do do ... | Noel Hill Bowen.................................... |
| 32400 | 3600 | 36000 | do do ... | Estate Robert Reed.. .. ........... ..... .......... |
| 19000 |  | 19000 | do do ... | Jean Chevalicr ........................ ........ ..... |
| 29868 |  | 29868 | do do ... | Daniel Holden ......... ............................ |
| $\because 591$ |  | 3591 | do do ... | Thomas McAdam .................................. |
| 10003 |  | 10000 | do do .. | George Creeley .................................... |
| $10000$ |  | $10000$ |  | Joseph Brook (tenant)............................. |
| 13,00457 5891 | 61978 2700 | $\begin{gathered} 13,62435 \\ 8591 \end{gathered}$ | Great Cranberry Marsh. <br> Water Lot. | Municipality, County Welland. Chester Draper $\qquad$ |
| 6,298 25 |  |  | H. and P. D. Road ...... | Choat \& Kern ............................................ |
| $\underline{22,630} 3$ | 93207 | 23,562 41 |  |  |

Inland Revenue Department, Ottawa, ${ }^{-} 31$ st July, 1876.

## C.-Concluded.

Rents, \&c.-Concluded.

A. BRUNEL,

Commissioner.

## INDEX.



## I N DEX.-Gontinwed.



## I N D E X.—Continued.



## I N D E X .--Conlinued

I N DEX.-Continued.


## I N DEX.-Continued.



I N D EX.-Continued.


I N D EX.-Continued.


## INDEX.-Conrluded.



## SUPPLEMENT No. 1.

то тие

# INLAND REVENUE REPORT 

FOR YEAR ENDED 30тн JUNE, 1876.

## Canal statistics

FOR SEASON OF NAVIGATION, 1876.


OTTAWA:
brinted by maclean, roger \& C0., wellingtun street.
1877.

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26 Burlington Bay Canal do ..... 10
27 - Ottawa Canals ..... do
do ..... 14
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do ..... 18
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## SUPPLEMENT No. i,

REPORT
OF

## COMMISSIONER OF INLAND REVENUE.

## To the Honourable <br> The Minister of Inland ${ }^{\text {T Revenue. }}$

Sir,-Adverting to a paragraph printed on page xxiii of the Report which I had the honour to present on the 15th November, 1876, I have now the honour to wait upon you with the Canal Statistics for the last season of navigation.

The statistics for the season of 1875 are printed with the Report above adverted to, and comparing them with those now submitted it will be seen that the aggregate revenue accrued has increased in 1876, as compared with that of the preceding year, by $\$ 12,893.24$. This increase is accounted for as follows:

|  | Decrease. <br> \$ cts. | Increase. <br> \$ cts |
| :---: | :---: | :---: |
| On the Welland Canal....................... |  | 8,475 29 |
| " St. Lawrence Canals................. |  | 4,078 93 |
| " Burlington Bay Canal............... | 84355 |  |
| " Chambly Canal. | 3,117 17 |  |
| " Rideau Canal. | 56364 | ............ |
| " Ottawa Canals. |  | 5,623 34 |
| " St. Peters Canal.. | 75996 | ............ |
|  | 5,284 32 | 18,177 56 |
| Shewing a net increase of or about $3 \cdot 61$ per cent. | . ........ | 12,893 24 |

This small increase is all the more satisfactory when considered in comparison With the traffic on the canals of the State of New York which, by the latest returns, show for the same period a decrease in tonnage as compared with the previous Beason of 24 per cent.

In continuation of the statistical comparisons which were given last year of the quantities of the principal articles carried through the Welland Canal, with the quantities of similar articles carried over the routes in the United States, in competition with that work, similar statements will be found printed herewith.

The increase or decrease in the tonnage of flour, wheat, barley, corn, oats, rye and other vegetable food, mored through the Welland Canal, and through the Erie Canal, as compared with the movement in 1869-the year before the reduction of the tolls on the Eric Canal took place-may be summrised as follows :--


The movement of Heavy Goods, including iron, salt, coal and iron ore shows the following result:-


Making a similar comparison of the tonnage of similar articles of Vegetable Food cleared downwards at Buffalo and Tonqwanda, with the quantities cleared eastward at Port Colborne, we have the following result :-


The quantities of Vegetable Food passed through the Welland Canal in transit between Ports in the United States has largely decreased, as will be seen by the following statement, and the decrease in 1876 is greater as compared with 1869 than in any preceding year. There has, however, been an increase in the quantities of Heavy Goods.


On reference to the returns made by the railways to the State authorities, and to the canal statistics, submitted to the State Legislature, I find that of the total tonnage of freight carried by the canals and railways, the State canals carried :-

| In 1859. | 68.9 per cent. |
| :---: | :---: |
| 1869. | $47 \cdot 0$ do |
| 1870. | 38.9 do |
| 1871. | 38.9 do |
| 1872. | $40 \cdot 1$ do |
| 1873. | 34.9 do |
| 1874. | 31.7 do |
| 1875. | 28.4 do |

It will thus be seen that although as will presently appear, the total quantity of freight carried by the canals and railways was less in 1875 by more than a million of tons than the quantity carried in 1874 , the railways still succeeded in increasing the proportion carried by them.

The quantities carried are as follows:-

|  | Total Tonnage. | Proportion by Canale |
| :---: | :---: | :---: |
| In 1859.. | 5,485,076 | $\cdot 6890$ |
| 1869.. | 12,453,174 | -4705 |
| 1870. | 15,148,274 | -3895 |
| 1871. | 15,844,152 | -3897, |
| 1872 | 16,631,609 | -4012 |
| 1873. | 18,200,208 | -3497 |
| 1874.. | 18,283,547 | -3174 |
| 1875. | 17,101,758 | -2841 |

The above figures are the latest I have been able to obtain in a reliable form, but there is reason for believing that a still larger portion of the total freight was carried by the railways in 1876 than in any previous year, and the figures in Statement $G$, as to the quantity of vegetable food carried to tide water, go far to sustain that conclusion, for it will be observed that while the quantity carried by canals has decreased more than eighteen per cent., as compared with 1869, the quantity carried by railway has increased very nearly one hundred and sixty-five and an half per viii
cent. The following figures are an abstract of the quantities, for eight years, of Vegetable Food carried to tide water by the canals and railways of the State of New York:-


I have the honor to remain, Sir , Your obedient servant,
A. BRUNEL,

Commessioner.
Department of Inland Revenue,
January 31st, 1877.

D.-TABLit shewing the Tonnage of the undermentioned articles moved through the Welland Canal, through a

E.-Table showing the Tonnage of the undermentioned Articles cleared at Buffalo and Tonawanda for transit through the Erie Canal for a series of eight years ended 30th June, 1876.

| - | $\frac{1869 .}{\text { Tons. }}$ | $\begin{gathered} 1870 . \\ \text { Tons. } \end{gathered}$ | $\frac{1871}{\text { Tons. }}$ | $\frac{1872 .}{\text { Tons. }}$ | $\begin{gathered} 1873 . \\ \text { Tons. } \end{gathered}$ | 1874. Tons. | $\stackrel{1875 .}{\text { Tons. }}$ | $\begin{gathered} 1876 . \\ \text { Tons. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Vegmiable Food. |  |  |  |  |  |  |  |  |
| Flour . ............. .... ...... .............. | 5,609 | 8,258 |  |  | 6 |  | 5,859 | 231 |
| Wheat ........... .......................... | 490,904 | 502,158 | 570,849 | 330,032 | 737,167 | 650,161 | 695,315 | 377,317 |
| Corn ....................................... | 219,874 | 165,577 | 579,708 | 866,169 | 611,675 | 459,728 | 273,006 | 356,064 |
| Barley .................................... | 1,978 | 19,944 | 19,810 | 41,515 | 8,636 | 3,192 | 1,156 | 6,335 |
| Oats ...................................... | 63,728 | 89,156 | 106,391 | 73,572 | 51,615 | 44,079 | 36,609 | 26,488 |
| Rye...................................... | 2,150 | 10,593 | 27,622 | 5,900 | 22,441 | 112 | 2,242 | 12,205 |
| Other Articles.. .......................... | 2,193 | 6,906 | 10,687 | 88 | 634 | 237 | 3,372 | 4,691 |
| Total | 786,436 | 802,592 | 1,315,693 | 1,317,276 | 1,432,174 | 1,157,509 | 1,017,559 | 783,331 |
| $\underset{\text { Decrease }}{\text { Increase }}\}$ | $\ldots$ | $2 \cdot 05$ | 67.29 | 67.55 | 8210 | $47 \cdot 18$ | $29 \cdot 38$ | $0 \cdot 39$ |

Supplement to the above showing the Shipments at Oswego during the same period.

| Flour . | 7,361 | 11,440 | 10,043 | 4,773 | 4,061 |  | 1,728 | 967 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Wheat ........................................ | 141,360 | 115,732 | 123,173 | 57,865 | 53,361 | 108,288 | 32,690 | 21890 |
| Corn .. ........ ................... ..... ...... | 28,585 | 10,120 | 70,218 | 27,148 | 10,578 | 46,127 | 3,034 | 1,324 |
| Barley .................... ........ .......... | 66,794 | 77,906 | 72,675 | 62,172 | 46,337 | 77,007 | 75,083 | 63,336 |
| Oats ......................... ................. | 1,113 | $3 \cdot 953$ | 1,806 | 684 | 670 | 1,103 | 3,308 | 117 |
| Rye.................................................. | 8,569 | 7,102 | 6,250 | 6,751 | 6,019 | 7,053 | 4,989 | 5,703 |
| Other Articles........ ...................... | 14,033 | 11,628 | 13,259 | 10,425 | 10,739 | 3,747 | 5,931 | 6,638 |
| Total ........................ | 267,815 | 238,181 | 297,424 | 169,818 | 131,765 | 243,325 | 126,763 | 99,975 |
| Increase \} per cent. as compared Decrease $\}$ with 1869. | ............ | 11.06 | 1105 | $36 \cdot 58$ | $50 \cdot 80$ | 9.14 | 5267 | 6267 |



Table showing the Tonnage of the undermentioned Articles passed through the Welland Canal, in transit between Ports in the United States, during a series of eight years ended 30th June, 1876.




## REVENUE.

ending 31st December, 187 ; and 1876.


[^11]

# CANAL S'TATISTICS 

SEASON OF NAVIGATION,

1876. 

SUPPLEMENTARY APPENDIX A．
No．（A）24－General Statement showing the Quantity of each Article transported through the Welland Canal and the Amount of Revenue，collected during the Season of Navigation in 1876

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No. (A) 24.-Generdl Statement shewing the Quantity of each Article transported through the Wellan Canal,


No (A) 25.-General Statement showing the Quantity of each Article transported through the St. Lawrence


SUPPLEMENTARY APPENDIX A.-Continued.
No. (A) 25.-General Statement showing the Quantity of each Article transported through the St. Lawrence


SUPPLEMENTARY APPENDIX A．－Continued．
No．（A）26．－General．Statement showing the Quantity of each Article transported through the Burlington Bay

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|  | － | $\square$ |
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SUPPLEMENTARY APPENDIX A.-Continued.

| No. (A) 26.-General S | State | NT |  | the Cana | unt | $\begin{aligned} & \text { of each } . \\ & \text { Yontinue } \end{aligned}$ | Arti | ns |  |  |  | gton Bay |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Articles. | $\underset{\text { Canadian }}{\text { From }}$ Canadian Ports. |  | $\begin{gathered} \text { From } \\ \text { Canadian } \\ \text { United odtates } \\ \text { Ports. } \end{gathered}$ |  | $\begin{aligned} & \text { From } \\ & \text { United States } \\ & \text { to } \\ & \text { United States } \\ & \text { Ports. } \end{aligned}$ |  |  |  | Tons. |  | $\underset{\text { Total }}{\text { Tolls. }}$ | $\begin{gathered} \text { Amount } \\ \text { of } \\ \text { oflls. } \end{gathered}$ |
|  | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | \$ cts. |
| Whiting.. | 36 14 | 17 |  |  |  |  |  |  | ${ }_{14}^{36}$ | 17 | ${ }_{31}^{36}$ |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| dise not enumerated .......... | 3,111 | 996 |  |  |  |  |  |  | 3,350 | 996 | 4,346 |  |
|  | 42. | 2 | ........... |  |  |  |  | ............ | 42 | 2 | 44 |  |
|  |  |  |  |  |  | .... |  |  |  |  |  | ........ |
| Firewood, in eestels, ............. | 641 |  |  |  | ............ | .... |  | ... | 641 | .......... | 641 | -..... |
| Hoops.................................. |  | .... |  |  | ............. |  | ............ |  |  |  |  | ......... |
| Hop Poiles......................... |  |  |  |  |  | ........ .... |  |  |  |  |  |  |
|  | 844 | 412 |  | 808 | ............. | ............ |  | ................. | 844 | 1,220 $\cdots$ | $\begin{array}{r}2,064 \\ \hline\end{array}$ | ..... |
| Masts, Spars, and Tars, |  |  |  |  |  |  |  |  |  |  |  |  |
| Moles in vessels.......e.i.aiciol |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | 3 |  |  |  |  |  | 3 |  |  |
| Railway Ties, in ressels ........ dafta do | 894 | ....... .... | - |  | ... | ........ | .............. | .................... | 894 |  | 894 | .......... |
|  | ......... |  |  |  |  |  |  |  |  |  |  | ......... |
| Staves and dondings, burrel.... | ....... |  | ........... | ${ }^{\text {................ }}$ |  |  |  |  |  |  |  | ........ |
|  |  | 44 |  | .... | ............. | ............ | ........... | ........... | ........... | 44 | 44 |  |
| Staves, Slingle |  |  |  |  | .... | ................. | ............. |  |  |  |  |  |
| Split Posts and Fence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |
| Split Poste and Fence |  |  |  |  |  |  |  |  |  |  |  |  |
| Split posta and rence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |


| Articles. | From to CanadianPorts. |  |  |  | $\begin{gathered} \text { From } \\ \text { United States } \\ \text { United States } \\ \text { Ports. } \end{gathered}$ |  | $\begin{gathered} \text { From } \\ \text { United States } \\ \substack{\text { to odian } \\ \text { Canadian } \\ \text { Ports. }} \end{gathered}$ |  | Tons. |  | $\underset{\text { Tons. }}{\text { Total }}$ | $\begin{gathered} \text { Amount } \\ \text { of } \\ \text { oflls. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | $\mathrm{U}_{\mathrm{p}}$. | Down. |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | \$ cts. |
| Ashes, Pot and Pearl. .......... |  | $5_{7}^{2}$ |  |  |  |  |  |  |  | $\stackrel{52}{7}$ | 52 <br> 25 | 787 103 108 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 26 | 21 |  |  |  |  |  |  | 26 | 21 | 47 | 216 |
| Agricultural enumerated, Products Animal not...... |  | 372 |  |  |  |  |  |  | 1 | 372 | 373 | 2561 |
| ${ }_{\text {Agricultural }}^{\text {Agriey }}$ Smlements........\| | 1 | $6{ }^{7}$ |  |  |  |  |  |  | 1 | $62{ }^{7}$ | ${ }_{621}^{88}$ | - $\begin{array}{r}0 \\ 39 \\ 39\end{array}$ |
| Bariey ........... ...................\| | 4 |  |  |  |  |  |  |  | 4 |  | 4 | ${ }_{0} 12$ |
| Bones ................... |  | 25 |  |  | .......... | ............ |  |  |  |  |  |  |
| ( Baggage ............. ............ | ${ }_{121}^{162}$ | 114 15 | ..... |  |  |  |  |  | 162 121 | 114 15 | 276 136 | $\begin{array}{r}19 \\ 768 \\ \hline 18\end{array}$ |
| ${ }^{\text {Brimstone (Crude) }}$ - ${ }^{\text {anc. }}$. |  |  |  |  | ........... |  |  |  |  |  |  |  |
| Cement and Water Lime........ Clay, Lime and Sand........ | 239 | ${ }_{513}^{472}$ | -.......... |  |  |  |  |  | 239 | ${ }_{513}^{472}$ | 711 513 | 4166 4015 |
| Coail..................... |  |  |  | ......... ... |  |  |  |  |  |  |  |  |
| Corn .................................. | 9 | $32{ }^{1}$ | ..... | ..... ....... | ............. | ..... | \|............. | ...... | 9 | 322 | 331 | 2222 |
| Cotton (Raw) ....................... |  |  |  |  | ......... |  |  |  |  |  |  |  |
| Coffee ..................................... |  | 20 | ..... ..... | ...... | .......... | - |  |  |  | 20 | 20. | 100 |
| Dye Wood and Dye Stuff ..... | ...... |  |  | ..... | ... ..... | . |  |  |  | . |  |  |
| Earthenware........ ..... .. | ${ }_{20}^{3}$ | 5 | ... | .... ...... |  | ... |  |  | 硡 | 5 | 8 | (100 |
|  | 20 |  |  |  | ......... |  |  |  |  |  |  |  |
| Flour. ....... ..................... | 115 | 10 |  | .. ........ | ........ |  |  |  | 15 | in | 25 | 446 |
| Furniture ......................... |  | 36 |  |  |  |  |  |  | 7 | 36 | 43 | 491 |
| (Glass (Window) |  |  |  |  |  |  |  |  | 2 |  | ${ }_{7}^{3}$ | 0 0 0 0 |


SUPPLEMENTARY APPENDIX A.-Continued.
No. (A) 27.-Generai Statement showing the Quantity of each Article transported through the Ottawa Canals,

| Articles. | $\begin{gathered} \text { From } \\ \text { Canadıan } \\ \text { to } \\ \text { Canadian } \\ \text { Ports. } \end{gathered}$ |  | $\begin{gathered} \text { Prom } \\ \text { Canadian } \\ \text { United States } \\ \text { Ports. } \end{gathered}$ |  | $\begin{gathered} \text { From } \\ \text { United States } \\ \text { to } \\ \text { United States } \\ \text { Ports. } \end{gathered}$ |  |  |  | Tons. |  | Total Tons. | $\begin{gathered} \text { Amount } \\ \text { of } \\ \text { Tolls. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | \$ cts. |
| Wool................................. |  | 5200 |  | .................. |  | ,4**...日. ........ |  | ......................... | $\left\|\begin{array}{r}. . . . . . . . . . . . . . ~ \\ 443 \\ \ldots . . . . . . . . . . . . . . ~ \\ 2\end{array}\right\|$ | $1 . . . . . . . .$.5200$\cdots . . . . . . . . .$.143 | 5 | $\begin{array}{r} 042 \\ 4139 \end{array}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bark de....... .................... | 443 |  |  |  |  |  |  |  |  |  |  |  |
| Barrels, empty....................Boat Knees ................. | 2 | $\begin{array}{r}143 \\ . . .1 . . . \\ \hline\end{array}$ | ........... | ................. | ............. | ................. | $\square$ |  |  |  | 145 | ............... |
|  |  |  |  | ............... | .............. |  | ............ |  | $\qquad$ | 143 $\ldots . . . . . . . . . . . .$. |  |  |
| Floats......................... | .......... | $\begin{array}{r} 6,865 \\ 156,933 \\ 608 \\ 5 \end{array}$ |  | ................ | \|............ |  | ................ | \|................... | …....... | $\begin{array}{r} 6,865 \\ 157,119 \\ 608 \\ 5 \end{array}$ | $\begin{array}{r} 6,865 \\ 157,119 \\ 608 \\ 5 \end{array}$ |  |
| Firewood, in Vessels............. do rafts....... ..... |  |  |  |  |  |  |  |  |  |  |  |  |
| do rafts................... |  |  |  | ......... |  |  |  |  |  |  |  |  |
| Hop Poles................................... |  |  |  |  |  |  | $\square$ | ................ | ............. |  |  |  |
| Lumber, sawn, in Vessels...... | 17 | $\begin{array}{r} 115,942 \\ 43,952 \end{array}$ |  | 168,391 <br> ..........$~$ |  |  |  |  | 17 | 284,33343,952 | 284,35043,952 | $\begin{array}{r} 26,84760 \\ 1,29601 \end{array}$ |
| do do Rafts........ |  |  |  |  |  |  |  |  |  |  |  |  |
| Masts, Spars and Telegraph |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Railway Ties, in Vessels.. |  | 1,3241,809 | $\qquad$ |  | $\qquad$ | ... ........ | \|..........| | ................. |  | 1,324701,859 | 1,324701,859 | \|ricr $\begin{array}{r}18225 \\ 263 \\ 4283 \\ \hline\end{array}$ |
| Sow do Rafts... ${ }^{\text {d...... }}$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Saw Logs...................... |  |  | ......... | ................ | ............... | .................\| |  | \|................ |  |  |  |  |
| do do pipe..... |  | ................ |  |  |  |  | \|..............| |  | ............. | 1,859$\ldots . . . . . . . . . . . . . . . . . ~$ | 1,859 <br> ...............$~$ <br> ... |  |
| do do W.India |  |  | ….......... | \|.............. | ............ | ................. |  |  |  |  |  |  |
| Staves, salt barrel................ |  | 164 |  |  |  |  |  |  |  | 170 | …............ | 10 <br> 53 <br> 58 |
| Split Posts and Fence Rails, in |  |  |  |  |  |  |  |  | $\square$ |  | $\begin{array}{r} 164 \\ 22 \\ 1 \end{array}$ |  |
| Split Possels and Fence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Split Posts and Fence Rails, in |  |  |  |  |  |  |  |  |  |  |  |  |  |


No. (A) 28.-General Statement showing the Quantity of each Article transported through the Chambly Canal,


SUPPLEMENTARY APPENDIX A.-Continued.
No. (A) 28.-General Statement showing the Quantity of each Article transported through the Chambly Canal,



## A.-Continued. <br> APPENDIX <br> SUPPLEMENTARY



SUPPLEMENTARY APPENDIX A.-Continued. \&c.-Continued
No. (A) 29.-General Statement showing the Quantity of each Article transported through the Rideau Canal,


SUPPLEMENTARY APPENDIX A.-Continued.
No. (A) 30.-General Statement, showing the Quantity of each Article transported through the St. Peter's Canal, and the Amount of Revenue collected during the Season of Navigation in 1876.

| Articles. | FromCanadiantoCanadianPorts. |  | FromCanadiantoUnited StatesPorts. |  | $\begin{gathered} \text { From } \\ \text { United States } \\ \text { to } \\ \text { United States } \\ \text { Ports. } \end{gathered}$ |  | $\begin{gathered} \text { From } \\ \text { United States } \\ \text { to } \\ \text { Canadian } \\ \text { Ports. } \end{gathered}$ |  | Tons. |  | Total Tons. | $\begin{gathered} \text { Amount } \\ \text { of } \\ \text { Tolls. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Op. | Down. | Up. | Down. | Up. | Down. | Up. | Down. | Up. | Down. |  |  |
|  |  | 303 | ..... ..... |  | ........... | .............. | ............. | .............. | .............. | 303 | 303 | 303 |
|  |  | ................. | ............. | -.............. | .............. | ................. | …......... | ................ | 56 <br> 58 <br> 35 |  | $\begin{array}{r}56 \\ 114 \\ 235 \\ 44 \\ \hline\end{array}$ |  |
|  |  | 56 | .......... |  | ........... | ....... ..... |  |  |  |  |  | 114 |
|  |  | 200 | ........... |  | .......... | ............ | ........... | ............. |  |  |  | 235 |
|  |  | 44 | -.... | . | ......... | ............ | .......... | ... | ...... |  |  | 044 |
| Total Freight paying Tolls... | 149 | 603 | ... ....... | ........ . ... | .......... | .............. | ........... | .............. | 149 | 603 | 752 | 752 |
| Total Tolls on Vessels....................... ...................................................... |  |  |  |  |  |  |  |  |  |  |  | 2530 |
|  |  |  |  | Total Reve | from | sour |  |  |  |  |  | 3282 |

Notm.-In consequence of the Canal being enlarged, it has been closed since June last.
Inland Revenue Department,
Ottawa, December 31st, 1876.
No. (A) 31.-General Statement showing the Quantity of each Article transported through the Newcastle

No. (A) 32.-Statement of Traffic on the undermentioned Canals, and


APPENDIX A.-Continued.
the Amount of Tolls collected, during the Season of Navigation in 1876.


No. (A) 32.--Statement of Traffic on the undermentioned

| Articles. | Welland Canal. |  | St. Lawrence Canals. |  | Chambly Canal. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tons. | Tolls. | Tons. | Tolls. | Tons. | Tolls. |
| Class No. 3.-Concluded. |  | \$ cts. |  | \$ cts. |  | \$ cts. |
| Wool. $\qquad$ Alt other Agricultural Products, Animal $\qquad$ | 336 | 7000 | 147 | 2033 | 15 | 050 |
|  | 34 | 680 | 2,423 | 28283 | 153 | 555 |
| Total Class No. 3,....... | 749,558 | 143,312 52 | 351,753 | 39,877 54 | 136,772 | 13,300 59 |
| Class No. 4. |  |  |  |  |  |  |
| Ashes, Pot and Pearl.......... | 397 | 7080 | 1,965 | 29165 | 1,350, | 13500 |
| Agricultural Implements..... | 42 | 1660 | 231 | 2533 | 7 | 0 24 |
| Baggage ........................... | 16 | 640 | 774 | 13370 | 12 |  |
| Beer....................... ....... | 111 | 4335 | 359 |  |  |  |
| Brimstone, Crude................ Coffee ........................ | 2 | 045 | 4 6 | 08 120 | ..... | 010 |
| Crockery.............................. | 16 | 605 | 697 | 13350 |  |  |
| Dye Woods and Dye Stufts ... | 186 | 7440 | 59 | 560 | 53 | 530 |
| Earthenware..................... | 105 | 4200 | 965 | 20929 |  |  |
| Furniture .......................... | 184 | 6425 | 367 | 4910 | 7 | 057 |
| Glassware......................... | 62 | 2480 | 907 | 19277 | 23 | 230 |
| Glass, Window . ................ | 68 | 2575 | 954 | 19371 |  |  |
| Marble ...................... ....... | 1,771 | 70840 | 198 | 2384 | 150 | 1916 |
| Manilla ......... .................. | 46 | 1840 | 67 | 2135 |  | - |
| Molasses ..... ..................... | 25 | 930 | 6,484 | 38428 | 4,601 | 45964 |
| Nails ........... .................... | 427 | 16585 | 3,818 | 78927 |  |  |
| Oil, in Barrels ......... .. ........ | 1,183 | 47145 | 1,316 | 20579 | 375 | 3750 |
| Paint ............................... | 356 | 14135 | 265 | 6165 | 8 | 080 |
| Pitch and Tar.................... | 6 | 240 | 1,562 | 9304 | 1,195 | 11950 |
| Rags................................ | 32 | 920 | 863 | 89.98 | 38 | 377 |
| Rosin............................... | 42 | 930 | 1,792 | 10387 | 1,797 | 17970 |
| Soda Ash ........ ................. | 242 | 8040 | 1,224 | 23820 | ........ | . 10 |
| Steel ........... .................... | 38 | 1345 | 148 | 3004 | 1 | 010 |
| Sugar........... ........ ........... | 174 | 5435 | 2,982 | 62910 | 9 | 090 |
| Stone, Wrought...... ........... | 876 | 34465 | 282 | 5255 | $26^{\prime}$ | 247 |
| Tin ................ .................. | $54^{1}$ | 1845 | 636 | 12985 |  |  |
| Turpentine........................ | $\cdots$ | ....... | 572 | 3160 | 565 | 5650 |
| Vinegar .................. ......... | 14 | 470 | 250 | 4904 | ......... | - |
|  | 38 | 995 | 117 | 3634 | .. ..... |  |
| Whiting . ......................... | 74 | 1915 | 120 | 2618 | 2 | 20 |
| Whiskey and all other spirits | 864 | 32300 | 1,143 | 22379 |  |  |
| Merchandise, not enumerated | 5,278 | 1,887 03 | 13,943 | 2,158 26 | 994 | 9257 |
| Total Class No. 4..... | 12,729 | 4,665 83 | 44,070 | 6,698 92 | 11,214 | 1,116 82 |
| Bark |  |  | 93 | 426 |  |  |
| Barrels, empty. $\qquad$ <br> Boat Knees $\qquad$ | 927 | 18260 | 1,027 | 12002 | ... |  |
|  |  |  | 50 | 1200 |  |  |
| Floats.................. ........... | 70 | 025 | 7,152 | 12518 |  | ......... |
| Fire Wood, in Vessels. do in Rafts.. <br> Lumber, Sawn, in Vessels.... <br> do <br> in Rafts. | 60,015 | 2,912 12, | $\begin{array}{r} 74,580 \\ -\quad 207 \end{array}$ | $\begin{array}{r} 2,36379 \\ -432 \end{array}$ | 666 | 1637 |
|  | 110,925 | $\begin{array}{r}17,887 \\ \hline 161 \\ 21 \\ \hline 1\end{array}$ | 72,664 | 5,236 45 | 44,971 | 2,644 24 |
|  | 221 152 | 2193 3623 | 21,874 110 | 98432 1204 | 54 | 735 |
| Hoops.............................. |  |  |  |  |  |  |

APPENDIX A.-Continued.
Canals, and the Amount of Tolls collected, \&c.-Continued.


No. (A) 32.-Statement of Traffic on the undermentioned


## Inland Revenue Department, Ottawa, 31st December, 1876.

APPENDIX A.-Continued.
Canals, and the Amount of Tolls collected, \&c.-Continued.




## SUPPLEMENTARY APPENDIX A.--Continued.

the



RECAPITULATION



## REPORT

# WEIGIITS AND MEASURES, 

Beling

SUPPLEMENT No. II, TO THE REPORT

of the

# Depart,ment of inland revenue, 

$$
1876 .
$$

frinted by onder of farliament.


OTTAWA:
'iMNLED BY MACLEAN, ROGER \& CO., WELLINGTON ATAG心', 1877.

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## SUPPLEMENT No. II.

## 

## WEIGHTS AND MEASURES.

## To the Honourable

The Minister of Inland Revenuc.
Sir,-In continuation of the Report which I had the honour io submit on the 1st May, 1875, respecting the Inspection of Weights and Measures and Gas, I have now the honour to submit my uhird Report on the transactions in that branch of the Departmeni, bring ing down the details to 31st December, 1876.

1. I had hoped to have submitted this Report at an earlier date, bat in consequence of the delay that occurred in obtaining returns from several of the Deputy Inspectors, the statistics could not be compiled.

## Pinal arrangements as to inspection standards.

2. In obedience to instructions received from the Hon. Mr. Commission Geoffrion, I proceeded to London, leaving Quebec on the 17th July, $\begin{gathered}\boldsymbol{\theta} \mathbf{r r}^{\prime} \mathbf{s} \text { visititto } \\ \text { London in }\end{gathered}$ 1875, for the purpose of settling some disputes which had arisen 1875.
respecting certain damages received by the gas and other standards during their transit to Canada, and also for the purpose of completing arrangements as to the adjustment and verification of the Official and Inspection Standards then in process of construction.
3. The objects of my mission were satisfactorily accomplished, the manufacturers making such reduction in their charges as covered the loss which the Department would otherwise have sustained, and they sent an agent to Canada who, at their expense, had the neceseary repairs and adjustments completed.

Present equipment completed.
4. As the equipment of this service has been completed to the extent at present considered necessary, I'have prepared a schedule of the whole equipments purchased up to this date, which will be found in Appendix I.
$50-1 \mathrm{lb}$. iron standards in addition to the standards previously estimated for.
5. It will be observed that a large number of iron 50 -pound standards have been purchased, which were not included in my first estimates, but the necessity for which was discovered before the work of inspection had been commenced. They are necessary for the verification of weigh-bridges and large platform scales. For this purpose a considerable number of standard weightsare required.
6. The total number of 50 -pound iron standards already purchased is 4,100 , or $102 \frac{1}{2}$ tons. These were furnished by Mr. Fleck, of Ottawa, at $\$ 1.42$ per standard, or $\$ 56.80$ per ton. An attempt was made to procure them from parties at a distance, who tendered at a somewhat lower rate than Mr. Fleck, evidently in ignorance of the character of the work required, but the first delivery showed that the adjustment of these weights would have to be made under the oye of the Department, and that this alone would cost a very large portion of the contract price. The first delivery was rejected, and the contract was then given to Mr. Fleck, who made the adjustments in his own workshops in this city, and the verification was conducted by the operatives of this Department without difficulty.
7. As the cost of these iron weights was not included in previous estimates, the payment of $\$ 5,822$ disturbed my calculations to that extent.

Verification of standards at Westminater.
8. The whole of the Dominion Departmental, Official, and Inspection Standards, except those above referred to, both for weights and measures and gas, were verified at the Standards Department at the Board of Trade, Westminster. After full consideration this was believed to be the best arrangement, as they were all made in London, and had they been sent to Canada before being verified skilled persons must have been employed for their verification; and when adjustment was found necessary either the standards must have been sent back to London or skilled mechanics possessing special qualifications, as well as special tools suited to the purpose, must have been procured-all at no inconsiderable cost.
9. The number of standards verified as above mentioned is as Number follows:

| Dominion |
| :---: |
| Standards. |


| Departmental |
| :---: | :---: | :---: | :---: | :---: |
| Standards. |


| Official |
| :---: |
| Standards. |

Capacity
10. The assistants of the Warden of Standards were paid for the Cost of verisservice thus rendered the sum of $£ 320 \mathrm{stg}$., which amount was set- $\frac{\text { cation at }}{\text { Westminster. }}$ tled upon the representation of the Warden, and in accordance with the memorandum made by Mr. Chaney, Chief Clerk of the Department, which will be found in Appendix II., but as yet no payment has been made to either the Warden or his deputy, who undoubtedly had considerable work imposed upon them by the verifications which were carried on under their immediate and active supervision, and who, as I am informed, have been remunerated by other colonial and foreign Governments for similar services
11. I did not, however, consider myself authorized to make any payments for services of this nature, as they had never been submitted for the consideration of the Minister nor included in any estimate.

Cost of equipping inspection offices.
12. In Appendix III. will be fonnd a summary statement of the Number of cost, including transportation, of the equipment sent to each Inspec- Inspection tion division, as also of the cost of office furniture, fittings, \&c. From equipped. this statement it will be seen that out of the one hundred sets of Inspection Standards, 78 Inspectors had received their equipments prior to January 1st, 1877, and at that date thére remained 10 divisions still to be equipped.
13. The divisions yet to be established in the Provinces of Prince Number of Edward's Island and British Columbia, probably five or six, are still Inspection to receive their equipment. This will bring the number of divisions up to 94 , and will leave in stock five sets of instruments, which Will be available for the equipment of additional divisions if found necessary, or for making good any losse that may occur.

Loss of standards by fire at St.Hyacinthe.
14. I may here mention that in the unfortunate conflagration at St. Hyacinthe a complete set of standards and weighing apparatus were lost.

Dates at Which inspection was commenced in each division.
15. In Appendix III. will also be found the dates at which the several offices for Inspection of Weights and Measures were opened for business. The date at which the actual work of inspection was commenced, with other information, to which reference will be made.

Explanation of delay in commencing inspection in some of the divisions.
16. In addition to the offices in operation as above, there are nine Depaty Inspectors, who hare been appointed, but who had not as yet yet been placed in a position to commence work when the return was closed. This delay has been caused by various circumstances, but mainly by the delay in obtaining suitable offices without incurring an unreasonable charge for rent. In many cases the rent for which offices have ultimately been obtained is less than half what was first proposed, and as this item of charge relates to abont eighty places the charge for rent is in the aggregate an important item, especially as the leases generally extend over several years. It was therefore necessary to use all possible precaution for keeping this charge as low as is consistent with obtaining the necessary accommodation.
17. To the above cause of delay it may be added that as it was decided to make the subdivisions at once, the labour of organizing so many Inspection Districts, was greater than the Department, with the assistance then at its disposal, was able to accomplish as speedily as could have been wished.

Cause of irri 18. In attempting to give effect to the law in every quarter of the tation at operation of the law. Dominion at the same time, whatever was obnoxions or objectionable in the regulations made under it, was everywhere felt; and as a law of this character necessarily touches every business man, its enforceleent could hardly fail to cause a wide spread irritation. For no matter how perfect the law may be, or how necessary its provisions, it will almost infallibly cause annoyance to those subjected to its operation.

## Balanges with equal arms.

Regulations
19. The regulations established by the Order in Council of 26th July, 1875, (see Appendix IV), respecting ordinary balances do not require much comment. They were framed with a view to insuring that before a balance is admitted to verification it shall be ascertained that the principles essential to its truth have not been violated in its-
construction. So far as I know, there is but one of the regalations that has caused any dissatisfaction, and that dissatisfaction has been confined to those who have in stock or in use balances obnoxious to the rule. This rule relates to the appendage of a balance ball attached to the end of the beam which fcarries the pan in which the weights are placed.
20. This balance ball has been condemned in the principal commer- Balance ball cial cities of England as being calculated to facilitate fraud, and as being quite unnecessary for the purpose for which it is ostensibly applied, that is to balance the scales. As usually constructed, it consists of a brass ball which is sometimes made to assume a very ornamental shape. It is hollow, weighs from half a pound to a pound, and will also hold from half a pound to two pounds of shot. It can be readily opened by unscrewing it, and the quantity of shot increased or diminished at pleasure. It is attached to the arm of the beam by a hook, and can be altogether removed when desired.
21. From the above description it will, I think, be quite evident that hose who use such scales will have no difficulty in removing the whole or a part of the shot from the interior of the ball or in removing the ball altogether, and as not one customer in a thousand would think of testing the equilibrum of the beam without weights or load the load weighed would be deficient of the true weight by the weight of shot removed from the ball or by the whole weight of the ball if that is taken off, and inasmuch as with its contents it weighs, as I have said, from one to three pounds, the loss to the buyer may assume very grave proportions, and with reference to the small buyers its use is more dangerous than the use of light weights. That its use is unnecessary is quite obvious, for the weight necessary for balancing the opposite pan could as well be permanently attached to the pan that carries the, weights as take the form of the balance ball.

Opinions expressed by the dominion board of trade.
22. The regulations established by the same order, especially in Dominion relation to weigh bridges, have occasioned more comment, and $\begin{gathered}\text { Board of } \\ \text { Trade. }\end{gathered}$ as the Dominion Board of Trade may be assumed to represent the opinions of the trading portion of the community, it may not be uninteresting to hear what that body had to ray on the subject of Weights and Measures at its meeting in Otiawa lat January, especially as its utterance may be assumed to indicato the feeling
of the public in relation to the law. The following is the resolution. passed on that occasion :-

Resolution passed by.
> "That this Boarl, while approving of the objects of the Weights " and Measures Act, desires to represent to the Government that "the inconvenience and charges which the Trade are put to in "working of the Act are excessive, and that the yearly compul"sory inspection, if enforced, should be at the public cost and " not made a charge on the individual trader. Further, that there: "be recommended to the consideration of the Government the "expediency of so modifying the law that provision shall be " made for stamping two and five gallon wet measures, and that. " the shape of such measures of capacity may be conical instead " of cylindrical.
23. It will be seen from the abore that exception is taken to the law as administered only on two points. The one is that the tariff of fees is too high. The other is that we have refused to verify measures of a conical form and of two and five gallons capacity.

Bummary of riews entertained by Dominion Board of Trade.
24. On reading ove: the speeches of those who spoke on the subject, as officially reported, I find that one of the speakers alluded to two or three other points. His views were not embodied in the resolution, but may nevertheless be referred to. The whole may then be classified thus:---
(a) Fees charged are excessive.
(b) Morchants are put to inconvenience.
(c) Charges for a second and all subsequent inspections should be at the public cost.
(d) Two measures of capacity of special form should be authorized.
(e) Certain weighing machines which have not been admitted to verification should be so admitted.
(f) For the convenience of grain dealers a sixty pound weight should be legalized.

[^12]Fees for verification.
26. As to the fees charged for verification they have been adjusted Fees designed with a view to making the revenue from this service cover its cost. of inspection, So far this result has not been attained, but that is more due to want of energy in some quarters as to the enforcement of the law than to equally over the whole Dominion, there will be no difficulty in making large concessions in the directions indicated in the the third item of objections above stated. But, if, in consequence of adverse infuences, some localities are allowed to escape, to a large extent, the operations of the law, any reduction made in the fees cannot fail to have the effect of throwing a portion of the cost on the general public, a result which is suggested and approved by the third objection.
27. It has been suggested, that, in order to prevent imposition, the adjustment should be made by the Government Inspectors. Complaints as to the cost of adjustment have been

Proposal to adjust by Government. made by persons who are under a misconception as to the $l_{\text {law, }}$ and are under the impression that the mechanics who have undertaken to do this kind of work, and who have in some cases accompanied the Deputy Inspector on his tours are officers of the Government. As to such cases, explanations have been given and the provisions of the law have been pointed out. The inspecting officers have also been directed to make known as widely as possible that the Government takes no responsibility as to the adjustments.
28. It is abundantly evident that the adjustment of weigbts and Inexpedient measures and weighing machines could not be done by officers of an arrange the Government without doing greatinjustice to many parties, and ment. giving occasion for greater complaints than have as yet been heard of, which would be more difficult to allay, because they would have a broader foundation in truth.
29. The amount of labour and mechanical skill necossary for the Schedule of adjustment of similar sets of weights or of similar weighing machines is exceedingly variable. To adjust one might cost several dollars, or it might almost amount to a reconstruction of a balance, While to adjust another might not cost more than fifty cents. This being the case, a uniform tariff of fees would be a manifest injustice. It would, moreover, be a premium for submitting worn-out and dilapidated articles, that would cost more to rehabilitate than they would be worth. To refuse to adjust them would assuredly raise an outcry against the officer.

Charges for adjustment, if fixed by Inspector, would cause dissatisfaction.

If done by same officer there would be a danger of its being slurred over.

No evidence that fees are more than sufficient.

Cost of inspection for six months ending 31st December, 1876, and amouut collected.
30. A fixed schedule of fees for adjustment is therefore out of the question; but a variable one, subject to the ever-varying opinions of the respective Inspectors, would be still more objectionable and would turn upon the officers of the Department with greatly magnified intensity all the dissatisfaction that is now vented upon the individual adjuster. The Inspectors would be accused of extortion for their own benefit, and if the charges were made in proportion to the time occupied, the Inspector would be accused of laziness and of incompetence.
31. But this is another reason why the performance of the work by Inspectors should not be permitted. Nine-tenths of the people submitting their weights, measures, \&c., for verification, would, if a charge were made for adjustment, assert that no adjustment was required, and it would be exceedingly difficult, I may say impossible, to disabuse them of the notion that the verifier had asserted the incorrectness of the articles tested, in order that the adjuster might make money out of them.
32. There would also be the danger that if the adjuster and verifyer were the same person-and especially if the adjustment were charged for by a fixod schedule of fees-that the work of adjustment would be alurred ever and that the conscience of the verifier would be barthened in order to lessen the manual labour of the adjuster.
33. There does not appear to be any better reason for the Government undertaking the adjustment of weights, measures and weighing machines, than there is for its undertaking their manufacture.
34. In further reply to the complaints that the charges for verification are excessive, it may be stated, that at present, we have no evidence that they are more than sufficient to cover the expenses; if this should hereafter prove to be the case they should of course be reduced.
35. Making reference to the statistical table (Appendix III) it will be seen that for the half year ended 31st December, 1876, the total collections amounted to $\$ 19,700$, while the outlay was $\$ 34,476$. There was therefore a deficiency of $\$ 14,776$. But it will also be seen that in the Province of Ontario the cost has been $\$ 16,310$, while the collections were $\$ 14,496$. The deficiency therefore was only $\$ 1,823$. In some of the most important divisions of this Province, the inspection was not actually commenced until the year was somewhat advanced, in one case as late as November. In three other cases the work was not commenced until October, and in three
divisions no returns are included for the first half of the year. It is not therefore too much to expect, in so far as Ontario is concerned, that the small deficit shown for the first half of the year will be changed into a surplus before the end of the second half.
36. In the other Provinces it will be seen that from several divisions Expenses and collection in no returns had come in when the half year was closed, and that in each Province others it was well into the half year before the work of inspection was commencd. It is possible, therefore, that the large adverse balance may be, if not altogether removed, considerably reduced before the 30 th of June. This, however, will largely depend upon the vigour with which the inspection is pushed.
37. The following statement will show the financial result of the first half of the current fiscal year:-


## Inconvenience caused to traders by inspectors.

38. As to the inconvenience to which merchants are exposed, it Few comis impossible to carry on the inspection without subjecting them to some trouble as well as cost. There have not been more than two, or at most three, complaints communicated to the Department of the deputy inspectors having caused unnecossary trouble, and in those cases the Department took immediate steps for preventing the repetition of the annoyance complained of.
39. But it may have happened that much unnecessary annoyance Inspectors has been caused which the parties affected by it have borne silently, and of which, therefore the Department has no knowledge. It would not be surprising if that has been the case. For it must be remembered that a large majority of the deputy inspectors, prior to their may have misconstrued instructions and so caused inconvenience which appointment, had hal but scant opportunity for acquiring a know. borne silently. ledge of the duties they were appointed to perform, and therefore not unlikely to misconstrue the technical instructions communicated to them. The Department has used every effort to prevent or remedy misconceptions arising oat of this cause, and it is believed, xiii
that, as its officers possess themselves of the nature of their duties, such causes of complaint will become more rare.

Twentyseventh section of the Act not enforced as regards dealers in weights and measures.
40. The twenty-seventh section of the Act is so worded that the dealer in and the importer of weights, measures and weighing machines, as also the manufacturer of such articles is prohibited, not only from selling, but from having in possession any such articles unlessthey are inspected. This would have occasioned much annoyance and cost if it had been enforced; but, under the instructions of the Minister, the Inspectors were directed (see Appendix IV) not to enforce that part of the law, and it has accordingly remained in abeyance, pending the decision of Parliament as to its amendment.

## Measures of capacity.

41. Up to the passing of the resolutions above quoted, the Department had never received any intimation that the measures of capacity mentioned in it were required by the trade. As will be seen on reference to the Order in Council which establishes the multiplies of the gallon that may be admitted to verification, a two gallon measure, i.e., the peck, is already authorized, as is also the four gallon, or half bushel measure.

Two and four gallon meagures have been legalized
42. It has probably been lost sight of, that, under the law, the measures of capacity are uniform, whether for wet or dry measure, but that is really one of the advantages obtained by the Act. Before the present law was passed, there were two legalized measures of capacity, the wine measure and the Winchester measure, which there is reason to believe have been used in many instances and specially in the milk trade, indifferently. Now the Winchester gallon is an approximation to the Dominion standard or Imperial gallon, while the wine gallon is only five-sixths of that measure.

They may be sufficient for the trade, and may be made conical.

## Dominion

Board of
Trade took no exception to the Dominion standard of capacity.
43. Probably the two and four gallon measures will meet the requirements of the trade. If so, it is only necessary to legalize the conical form to which I see no objection, as it would obviously be an advantage in measures of that size, and such measures are not likely to be required, except in large cities, where the standards will be available.for their verification.
44. As the Dominion Board of Trade did not, either by resolution or by the reported remarks of any of its members, make any reference to the standard of capacity, it may be assumed that no material inconvenience has been experienced in consequence of the change, which appears to have been generally accepted in the Province of

Ontario. It has also come largely into use in Montreal, and in other parts of the Province of Quebec, but only to a limited extent in the Maritime Provinces.


#### Abstract

45. Appendix $V$ will show that the total number of Dominion Number of measures of capacity verified in the Dominion during the half year ended 31st December, 1876 , was upwards of 37,000 , of which there Were in :-

Dominion measures of capacity verified in each Province.


| Ontario | 27,484 |
| :---: | :---: |
| Quebec | 9,142 |
| New Brunswick. | 168 |
| Nova Scotia. | 856 |

46. A petition was presented, numerously signed, and professing Petition from to represent the opinions of the commercial community of St. John, St. John, N.B. New Branswick, in which it was represented that the use of the standard gallon, while the use of the old wine gallon was also permitted, would open the door to endless differences and disputes.
47. There is some force in this allegation of the petitioners Remedy for It is, however, the only representation on the subject that has the dificulty come to the Department, and the obvious remedy for this danger is the general adoption of the established standard. This course has been followed in Ontario, and to a large extent in Quebec; and can at any time be brought about by the chicf dealers in the principal business centres, whose action in the matter will be speedily followed by the smaller dealers, not only in the city itself, but in all places tributary to it.
48. There is every reason for believing that long before the Complete period allowed by law for the use of the wine gallon has expired, all measures of capacity, other than those which conform to the uniformity of measures of capacity Dominion standard, will have gone out of use in Ontario, Quebec, Manitoba, and in British Columbia, and, it is to be hoped, that in the Maritime Provinces, a complete uniformity will have been effected by the time established by the Act.
49. But it may be worthy of consideration whether the law Immediate should not be so amended as to terminate the permissive use of the extinction of Wine gallon at once. This is advocated by some and although it $\begin{aligned} & \text { advocated by } \\ & \text { some parties. }\end{aligned}$ might cause a temporary dissatisfaction, would effectually terminate ${ }_{2}^{*}$ all differences, and would most speedily bring about a feeling of satisfaction.

Necessity for legislation fully established.

Diversity of measures of capacity formerly in use.

Cost of substituting Dominion measures for those formerly in use.
50. Wherever the inspection has been practically in force, the advantage of establishing one standard for measures of capacity, in place of those previously legalized, has received many illustrations. The most forcible have occurrod with reference to the milk trade; I say the most forcible, because that is a trade which in towns and cities comes to every one's door. It has been ascertained. that milk has been sold in the same town indifferently by the wine measure, the Winchester measure and the old ale measure, by persons who are in happy ignorance as to the comparative value of the measure used, and who, in their simplicity, had been satisfied with the measures as offered for sale by irresponsible makers.
51. There are, moreover, in the Province of Quebec, a large number of French measures in use, which were legalized submultiples of the minot, thus further complicating the system. There has, therefore, been in use:-

The Winchester gallon of ..................... $268 \cdot 8$ cub. in.
The Wine gallon of ................................231.0 do
The Ale gallon of..................................282.0 do
And in Lower Canada a submultiple of
the minot, known as the "pot," which
approximatea to the half gallon, and
of which two are equivalent to

Of the larger measures, there were :
The minot, of about...... ........................2,346 do
The Winchestor bushel of......................2,150.42 do
with their halves and quarters.

From the above, it will be seen how unsatisfactory the practice has been, and how great the opportunity for error, uncertainty and fraud.
52. It may not be out of place to refer here to the cost involved in substituting the Dominion measures for those heretofore in use. It was with reference to this that the law was made to tolerate the old measures until 1880. By that time there will be very few of the measures that were in use when the law was proclaimed fit to continue so, and it may further be stated, without fear of contrar diction, that two-thirds of the old wine measuies now used are unfit for use, by reason of indentations which reduce their capacity to the injury of the purchaser of goods measured by them.
53. The instances will be rare, therefore, where any real hardship There will be will be inflicted from this cause, and when it does happen, it will of real hardonly bear on those who are well to do, and who have provided ship. themselres with measures of unusually goodquality. In the smaller shops, where measures of inferior quality are in use, it is in the nterest of their customers, who are usually working men, and their families, that the delapidated and unjust'measures too often found in use, should be replaced by others that will insure justice to both parties.
54. In proposing the regulation as to the form and material of Regulations measures of capacity that should be admitted to verification two $\begin{gathered}\text { as to form and } \\ \text { material of }\end{gathered}$ objects were aimed at:measures.
(a) To adopt a form that could be easily verified.
(b) To insure their construction of a material that would resist the stress of ordinary commercial use without materially changing their form.
55. When it is remembered that the verification of weights and Reasons for measures requires the Deputy-Inspectors to travel over the whole making such country, visiting every village in which there are any shops, carrying with him the standards necessary for inspection purposes, it will be evident that it is important to reduce his standards to a minimum and especially to avoid if possible the carrying of the someWhat cumberous standards of capacity.
56. To effect this the "Portable Kit," refered to in my second report on weights and measures, p. xvii, was designed. This apparatus weighs about 26 lbs . and contains everything that is necessary for ordnary inspection provided the measures of capacity are made cylindrical. They can then be verified by means of a divided brass rod adapted to that form of vessel.
57. In view of the consideration above stated, and of the further The regulaconsideration that measures of capacity as commonly made do not tions are $\begin{gathered}\text { necessary. }\end{gathered}$ last for any great length of time, and that the verification would mainly affect those made to meet the requirements of the law establishing Dominion Standards it was believed that there would be no injustice in requiring the new measures to be made of a cylindrical form.
58. Some exception was taken to this form by parties who were Form not under the impression that it would not be so convenient as the objected to conical form, but this impression disappeared as soon as these parties in use.
saw the improved measures in use. The conical form would without doubt be better for large measures used for measuring liquids, such as two gallons or upwards, but up to one gallon there is no doubt but the cylindrical form is in every respect the best, and I may here state that in France it is the only form used.

Restrictions as to material.
59. As regards the material to be used, the only restriction is that it shall be of sufficient substancefto resist the stress of ordinary wear and tear. An examination of the wretched specimens of tin measures that have been largely in use would satisfy any disinterested person that this restriction is absolutelynecessary. Many measures were formerly made of sheet metal-usually tin plate-so thin that the slightest blow would indent them to the manifest loss of those purchasing groods measured by them. To such an extent had this mischief gone, that measures were found in use that had been reduced in capacity by these indentatious as much as twenty per cent.

Nature of material admitted.

Hegulations as to weigh briages misconstrued.
60. As the regulations now stand, the following material may be used for moasures of capacity :

Bronze,
Cast Pewter,
Sheet Copper,
Sheet Brass,
Tin plate,
Iron plate, galvanized or plain,
Wood.
The thickness of the metal plates is denfied.

## Regdlations respecting weigh zridges.

61. There has been, and probably continues to be, a good deal of misconception as to what is required in relation to weigh bridges and platform scales, and, indeed, as to weiging machines generally. One of the speakers at the meeting of the Dominion Board of Trade alluded to this question, which is, undoubtedly, a troublesome one to deal with, and the proceedings of the Department in relation thereto have necessarily been of a tentative character.

Regulations made with sole view to prevent unjust weighing
62. The idea upon which all instructions in relation to the verification of balances, weigh bridges, and weighing machines generally, have been based has been to exclude from verification all such apparatus as may be used for facilitating fraudulent weighing or as from inherent defects of construction might cause false weighing But there are so many descriptions of scales and weighing machines xviii
in use that it has been found most difficult to frame a general regulation with such precision as will exclude all objectionable instruments without undue interference with some that are not objectionable.
63. Modifications of these regulations have been made from Modifications time to time by Departmental instructions, so as to remove any fary. apparent hardship, and it is believed that no unreasonable delay has arisen in the removal of causes of just complaint.
64. The regulations respecting the verification of platform scales, Regulations as has already been stated, were made with a view to the protection of the vendor as well as the purchasers of goods weighed by them. in ral details worked out The Order in Council in relation to this matter necessarily laid down mental orders. general conditions as to the admission of this description of weighing apparatus to verification, and il became the duty of the Depart. ment to work out the details. The interpretation given to the Order in Council will be found in Circular 134, which is printed in Appen. dix IV, and I may here refer to the exceptions that have been taken to these regulations by some of the parties affected by them.
65. There has been some annoyance caused by confounding the Misconcepbalances with equal arms, which are referred to in $\S 2$ of as to pointer section A of the Order in Council, and which was intended to apply on counter only to the ordinary balance provided with pans suspended below the beam from each extremity, with the equal armed counter scales. which have their pans above the beam described in section $1(d)$ of Article III, Circular 134, and which require no tongue or pointer to indicate its equilibrium. When misconceptions of this kind have come to the knowledge of the Department, the Deputy Inspectors have been advised of the error.
66. Next to the above, I may refer to the so-called "Union Scale," Certain kinds with two platforms, described in (a) of the paragraph above of Union quoted. The upper platform of this scale is provided with a "scoop" ${ }_{\text {facilitate }}$ made for weighing sugar, tea and the like. As the scale is in equili- light weight. brium without the "scoop," a special counterpoise for it is provided. This counterpoise is a small disc, which is not likely to attract much notice, and there is reason to believe that it is frequently forgotten, sometimes designedly omitted. In either case, the customer is the loser of whatever weight it represents; that is, the weight of the "scoop," which varies from one to two pounds. Now a loss of that magnitude on say eight or ten pounds of tea or sugar represents a very grave per centage of loss, which, whether it arises
from intention or accident, the purchaser has a right to be protected against. Indeed the source of error abore described is a more important matter than the greatest error that is likely to exist in either weights or measures of an ordinary description.

Side beam for weighing fractions of a pound facilitstes light weight.

Paragraph in $0 . \mathrm{C}$. respecting balance ball on weigh bridges suspended.
67. Next, I may mention the rejection of the scale figured at (c) in the paragraph of the Circular first quoted. This scale has a small supplementary beam, on which is suspended a moveable weight for indicating ounces, half ounces, and quarters. This supplementary beam is invariably towards the dealer, who, as a rule, is the weigher, and out of the view of the purchaser. Now, when it is considered that the smaller dealers, from whom the working classes usually purchase their supplies, or, in other words, the proprietors of what are known in England as "Saturday night shops," deliver to a great extent to the children of their customers, it will be seen how easy it is to deliver short weight. There would be no great difficulty in doing so even to adults who are not possessed of more than ordinary intelligence.
68. This is clearly a 'racility for committing fraud" which should not be legalized. It is worse than the possession of light weights, for, while such a scale can weigh correctly, the dishonest trader can, without fear of detection, so use it as to cause all and more than all the loss to his customers that would arise from the use of light weights.
69. That part of the Order in Council which prohibits the use of the moveable balance ball (Art. C, section 9), has occasioned much dissatisfaction, and, after consulting with the Minister, its suspension was ordered by a Departmental order, which is embodied in Note 6, to the last paragraph of Circular 134.
70. It is alleged that the use of the balance ball with platform scales is imperative, and that to prohibit its use is equivalent to prohibiting the use of the scales. In reply to this it may be answered that the use of the balance ball is avoided by manufacturers of weigh-bridges and platform scales, both in England and on the continent of Europe. Since, however, there is no question but its use is universal in America, it is necessary to admit it until gradually eliminated in deference to the reasons which can be urged against its use; and inasmuch as it can be shown that its use may be dispensed with without any real inconvenience, and that its retention is a fruitful source of error, it is not unreasonable to hope that the day is not far distant when weighing apparatus will

We offered to the Canadian trader that will be free from the defects which make the balance ball at the present moment a necossity.
71. In the meantime it is admittedly possible to limit the effect proposal to which the balance ball can have on the accuracy of the scale with- limit effect of ont causing the inconvenienc, of which the trade havecomplained. I have had some communication with Messrs, Fairbanks on the subject, and I submit, after carefully considering the reply to my enquiry, that in amending the Order in Council it should be provided that the balance ball shall be so arranged that it cannot affect the weighing by the scale beyond a certain percentage of the weight of the platform.
72. This suggestion is based upon the consideration that if a weigh-bridge is properly constructed, the circumstances that are alleged to make the means of adjustment necessary, cannot affect any othar part of the machine than the platform. These circum.

Circam-
stances whieh are said to make the balance ball necessary. stances, so far as they have been stated to me, are:-
(a.) The wear to which the platform is subjected by ordinary uee.
(b.) The accumulation of dirt, snow, ice, \&e.
(c.) With reference to wooden platforms, the drying of the wood in hot weather, and the absorption of wet in damp, rainy weather.
73. With reference to (a) it is clear that the change in the weight Change of of the platform from this cause will be a very slow process, and weight in it may be doubted whether an annual adjustment would not fully wrdinary meet the case. However that may be, it is certain that a very limited movement of the balance ball will be sufficient to compensate it.
74. The accumulation of dirt, snow and ice may be allowed to go to any extent, or it may be confined within very narrow bounds. When the weigh-bridge is under cover and is kept ordinarily clean, the error caused by the acccumulation of dirt will be a trifling affair and dependent upon the degree of cleanliness observed by the warehouseman or othor person in charge. If it is exposed to the weather, the amount of error caused is likely to be greater than any balance ball can compensate, unless a good deal of trouble is taken to remove the snow before it melts, or to clean off the accumulation of dirt brought on the platform by horses' feet, the wheels of vehicles Weighed with their loads, or by cattle when used for weighing live stock. In such casos there are three methods by which the exces-4-2**
sive weight of the platform may be rectified: By changing the weight of the "balance box" or permanent counterpoise; hy cleaning the platform sufficiently to bring the error within the remedy afforded by the balance ball; by taking the tare and deducting it from the gross weight, as is done with reference to the sleigh or other vehicle weighed with the load.

## "Belance

bex" should not be tampered with.

Change by
absorption of wet by wooden platforms
75. That the method last mentioned is the one most likely to insure equitable weighing, there can be no manner of doubt, but it is probable that the second method will be most commonly adopted. The first I submit, in the interest of the purchaser of the load weighed, should be strictly prohibited, fir I hold that if it is permitted to tamper with the weight of the "balance box" or permanent counter: poise, the way would be opened for very great errer both of an intentional and accidental nature. The permanent counterpoise should, in the interest of the public, be a fixed quantity and it should be stamped.
76. The remaining cause of error (c) is likely to be of frequent recurrence, but its amount is confined within comparatively narrow limits, and its utmost quantity is measured by the weight of water which a dry pine piatform will absorb during any spell of wet weather. I have heard this weight stated so variously and at such large quantities that I am led to believe there has never been any aceurate observations made on the subject. The reasonable course would, I submit, be to adjust the balance when the platform is dry, to confine the operation of the balance ball in either directions within a reasonable limit, and when, owing to the unusual duration ot wet weather, the limit of the balance ball is exceeded, the weigh master should take the tare as above suggested.

Remedy $\quad 77$. If the above views are accepted, it remains to decide upor some regulation as to what shall be the limit of the effect which the balance ball shall be allowed to have. This limit may be expressed by stating that its utmost movement shall not affect the equilibrium of the scale to a greater extent than a fixed proportion of the utmost load which the moveable counterpoise can weigh on the graduated tirm.

Maximum error may be thereby limited.
78. By such a regulation as this, the maximum error that can be caused by the designed or inadvertent movement of the balance ball will be known, and if that maximum effect is inscribed on some conspicuous part of the scaie, all parties interested in the woighing: will have sufficient notice to put them on their guard.
79. I come now to the consideration of that part of the regulation Regulations which affect the counterpoises used with weigh-bridges. These as to counter regulations may be summarised as requiring :
(a.) That the counterpoise shall be either an authorised submultiple of an even multiple of the pound; that is, either one, two, three or more pounds, or a half, a quarter or an eighth of the pound.
(b.) That they shall have their actual weight distinctly marked on them; as, also the loal they are to "draw" or indicate on the platform.
(c) That provision shall be made for incising the stamp.
80. Unless it is desired to muitiply the Inspection Standards to an unlimited extent, and greatly increase the cost and difficulty of inpection, there must be some limit placed to the denomination of

Necessary to aroid undue multiplication of standards. weights admitted to verification; and I think it will be admitted by every one acquainted with the exigencies of the case, that it is quite easy to confine the counterpoise to the denominations indicated above.
81. But it has been ascertained that a good many scales have Scales that do been sold, usually of an inferior character, that do not come up to the requirements of this regulation. As to these scales when presented for verification by parties who had them in use before the inspection not confiorm to regulations admitted under certain was fully established in the Division in which they are submitted, it is proposed to waive the objection, and, pending a decision, the regulation has to that extent been suspended.
82. But as regards scales introduced into Canada, or manufac- Scales heretured therein, after the inspection has been completely established, it is submitted that this regulation as to the counterpoise should be maintained.
83. The importance to the general public of having the actual weight of each counterpoise and the load it is made to indicate on the platform legibly marked thereon, is greater in relation to the counterpoise weights used with platform scales than in relation to ordinary weights in the same proportion as the weight bears to the load; for the substitution of an erroncous counterpoise affects the accurary of the weights, not alone to the extent of the error of the Weight, but to the extent of that error multiplied by the ratio of the counterpoise to the load weighed by it. Thus, an error of half an ounce in the weight may produce an error of tifty or even tive hundred
$\mathbf{4 - 2 \frac { 1 } { 2 } * *}$
xxiii
ounces in the load. For this reason, it has been impressed on the Inspectors that weights used as counterpoises with platform scalos should be verified with even greater care than ordinary weights.

Compliance necessary to justify stamp ing.

Provision for receiving stamp necessary.

Regulations in other countries more stringent than in Canada.
84. In order, therefore, to justify the Inspector in stamping weights of this description, it is necossary that there should be me chance of error as to what they are intended to be. There should be no room for doubt on this point; for, unless the owner or maker is bound by some tangible evidence as to his intention, the door would be opened to endless evasions.
85. Unless some special provision is made for receiving a stamp, it would of course be impossible to stamp an ordinary weight made of cast iron. No punch can be made to give a logible impression on the hard skin of cast iron and endure for any considerable time. Hence the necassity of providing in iron weights a plug of soft motal. But this was objected to, because the lower denominations of counterpoises are quite thin-so thin that there is not sufficient substance wherein to insert the soft metal, unless it is made to take the form of a "rivet." There was also an objection to drilling the thicker counterpoises for the insertion of the soft metal plug. As a compromise it was arranged that the owners or manufacturers should remove from a small area of the surface of the counterpoise the hard skin, so as to admit of stamping the iron itself. This arrangement is quite satisfactory to the manufacturers; but as weights already adjusted cannot be so dealt with without reducing their weight below the standard, I see no alternative but to require the alternative arrangement for receiving the stamp to be made.
86. It has already been observed that the regulations made by the Department have necessarily been of a tentative character. This has been more especially the case in reference to the weigh bridges and platform scales. As to this branch of the subject, I could find bat little in the practice of other countries that could be recommended. for adoption here ; for if the regulations which are in force in France and Germany respecting this description of weighing apparatus were in force in Canada, hardly a weigh bridge or platform scale now in use could be admitted to verification. In the United Kingdom the several municipalities or certain corporations have vested rights in relation to the stamping of weights and measures, so that there is no general lawd or regulation to which I can refer on this subject; but I can state, with safety, that in Manchester, Birmingham and Liverpool, a very large proportion of the class of weighing apparatus, used in Canada, would be condemned; and justly 80 , xxiv
for' they are capable of being so used as to inflict a very large measure of injustice on the purchasers of goods weighed by them.
87. It would not be difficult to multiply evidence of this fact. I have at this moment, on my table, a scale in very common use ; one
$\underset{\text { wreighing ma }}{\text { Fraudalent }}$ chines described. of a description much eulogised as the very thing for small traders of limited means, as being very cheap, and as weighing with suffieient accuracy for all practical purposes. The degree of reliance that can be placed on these recommendations may be estimated by the fact that, with a common screw driver, this scale can, in one minute, be so altered that it will weigh either light or heavy to the extent of one ounce in the pound, according as the weights are placed on one side or the other of the pan; or if the weights are placed in the centre, it is capable of weighing with sufficient aecuracy, while, without any load, it is in perfect equilibrium. The scale can, with almost as little trouble be restored to comparative accuracy.
88. It must, I submit, be evident that such a weighing machine as this is more dangerons to the public than light weights or short measures. It would require an expert in such matters to detect the ous than weights. fraud, and it is not difficult to see how, when used for selling, the weights would be placed on one side of the pan, and when used for buying their position would be reversed; or how quickly the scale would be restored to adjustment when the Inspector's visit, appears as a near probability.

## Verification of Steelyards.

89. The verification of steelyards depends upon much the same principles as the verification of platform scales, the latter being no more nor less than a compound steelyard. Fortunately, the common steelyard, as it was made twenty years ago, is not so widely used as it formerly was; and after a careful examination of some of the articles sold under that name, no one who is capable of realizing its defects will regret its going out of use. Specimens have been examined in the Department that were found to be incapable of weighing within an error varying from ten to twenty-five per cent. To such as these the regulations are fatal.
90. But steelyards are made that give very accurate results, Steelyards of Weighing from 10 lbs . up to $2,000 \mathrm{lbs}$. within the remedy of error $\begin{gathered}\text { superior } \\ \text { quality. }\end{gathered}$ tolerated for the avoirdupois weight. It is to be regretted, however", that, a large number of these excellent instruments are in use, and that many are still being brought into use, that are graduated and

Some made for gross ton and cwts.

Regulations made before the requirements of the trade in that respect were known.

Weight of 6 ) lbs.
the counterpoises made to indicate the ton of $2,240 \mathrm{lbs}$. and its submultiples of 112 lbs., \&c. This is said to be necessary, as heavy groods bought in Britain are purchased by that standard. This may be a sufficient reason for their uso by those who import articles of that description; but I submit that some regulation which should confine their use to the purposes in which their necessity is said to have originated, should be made in order that they may not be made use of for weighing country produce when purchased from parties who would not be likely to notice or understand the difference.
91. The regulations in the Order in Council were prepared before the use of these excoptional beams was known, and may therefore require modification in the direction above indicated.

The Cental as a Unit for Grain Weights.
92. As the law now stands, and has stood since the first of January, 1874, the "cental" is the only unit of weight for all kinds of grain. When, therefore, the proprietors of some grain el evators in Montreal applied to have 601b weights verified as being the weight of a bushel of wheat, the only reply that could be officially communicated was, that the law did not recognize the bushel of wheat by weight. It may be added that the Department could give no other reply, for no 60 th standards have been obtained, and the balances used for verification are not calculated to carry more than 50 tb in each pan. It was never supposed that a larger weight than s0th would be legalised, as that is as large a submultiple of the ton as can be conveniently handled, and if the 601b is really necessary in commerce, as a unit of weight, it should be made by using two 30tb weights, a denomination alrealy legalised.

Superior
facility offered
by cental as a
Superior
facility offered
by cental as a grain unit.
93. It is a curious illustration of the force of habit, and of' the sensitiveness of commercial men as to any change in established usages, that there should be so much difficulty in reconciling the trade to the use of the "cental" as a unit in dealing with grain. No one I suppose questions the greater convenionce of the " cental" for all grain is now bought and sold by weight, and in all places, except where a special weigh beam is providod for each description of grain, the weight is as a rule first determined in pounds after which it is converted into bushels. How much easier then to divide by 100 than by $60,56,48$, \&c., acccording to the description of the grain.
quotations in Mark Lane are not by weight at all, but by measure ; that is, at per " quarter," which signifies a quantity varying in weight hetween 480 and 520 lbs .
95. Indian corn is quoted in Chicago by the bushel of 56 lbs ; in Liverpool by the "quarter," of 480 lbs., and in Mark Lane by the "quarter" which means a measure and not a weight. The same vagueness exists with reference to other grains.
96. In short, the quotations of the prices of grain in the English Quotations in markets which appear in the commercial papers of the Dominion, commercial yive no just conception of the prices except to the initiated. It is intelligible evident, therefore, that unless it is desired to make a secret craft of the trade, the "cental" would be accepted by all who desire to simplify the business affeeted by it; and I feel confident that if Canada would stand firm in leading the way, all grain would be dealt in by tho "cental," both in Liverpool and Chicago. I may add, tirat in Detroit, in the State of Michigan, as well as in several places in Canada, barley is now bought and sodd by the cental.
97. But if a special weight of 60 lbs . is necessary in the wheat trade, is not a 48 lb . weight equally necessary in the barley trade; a 56 lb . in the corn trade; a 36 lb . in the malt trade, and so on, to meet the fancied requirements of other trades?

If 60 lbs . is necessary for wheat, are not epecial

## Denominations of Weights.

98. While desiring to avoid [making regulations that would virtually confiscate a considorablo number of weights already in use, it was still necessary to bear in mind the importance to the public of eliminating the obsolete denominations as early as practicable. Except for the purpose of weighing imported heavy goods, which are bought in British or foreign markets by the old or gross ton, with its binary subdivisions into "hundredweights," "stones," and so on, weights of that description have gone out of nes, and hardly any $56 \mathrm{lb}, 281 \mathrm{~b}$ or 14 lb weights have been taken into use since the ton of $2,000 \mathrm{lbs}$. was legalized, now eighteen years ago. Consoquently, there are not a very large number of such weights in use, and such as are have, as a rule, greatly deteriorated. There can, therefore, be but little injury done to any one in refusing to admit such weights to verification after the time proposed in the regulations hits arrived.

Time may be extended.
99. But if it should appear that injustice would bo done without thereby serving the public interests, there is nothing in the law to prevent an extension of the time.
if weights. 100. If we are to retain a full recognition of the ton of $2,000 \mathrm{lbs}$., it is clearly necessary to make the smallor weights sub-multiples of that unit, and it is certain the 50 lbs. is as large a sub-multiple as can be conveniently handled. With this weight to start with, binary sub-multiplos could not be used, for the half of 50 is 25 , and the half of this would produce a fraction.

Scale of
weights found most convenient.
101. Upon a full consideration of the subject, therefore, and after ascertaining the divisions that have been found most convenient in dealing with similar matters elsewhere, it was determined that the numbers $50,30,20,10,5,3,2,1$, would give the most convenient combination of weights.

Binary division of the pound.
102. So long as the pound is divided into 16 ounces, the binary subdipision is most convenient, and in fact the only one practicable; and it is therefore retained by the Order in Council.

Lineal Measures.

No changes in multiples or sub-multiples of the standerd.

Mural standards in London, Eng.
103. As no change has been made by the law or the regulations either in the standard of lineal measure or its subdivisions or multiples, it is not necessary to offer any remarks on that subject. But I may be permitted to refer to the suggestions made in my previous reports respecting mural standards for the convenience of engineers, surveyors, architects, builders, \&c., in the principal cities and towns.
104. Since my former report was written, I have received from the Warden of Standards an account of the construction and verification of measures of 100 feet and 66 feet, and mural standards of the Imperial yard and its subdivisions, which are now exhibited in Trafalgar Square, London.

Considered of great public utility.
105. The Warden is of the opinion that these public standards will be of great use to engineers, architects and surveyors, and it is believed that they will be largely used by workmen in the several branches of mechanical trades. I am persuaded that similar measures would be of great value in the principal cities and towns in Canada, but until the municipal authorities will provide a suitable site, such standard measures cannot be laid down, even if the cost, which would be considerable, were voted for that service.

Mgltiples and Sub-Multiples of tae Standard Measure of Capacity.
106. This branch of the subject has already been referred to (§51) Same as hero when, considering the views expressed by the Dominion Board of Trade, and in (§51) the several varieties of measuros legally in use prior to the passing of the prosent law are mentioned, and inasmuch as the same multiplies and sub-multiplies of the standard have been legalised as were in use prior to the issue of the Order in Council of the 26th July, 1875, it is unnecessary to offer any remarks thereon. It may, however, be reiterated that all the legalized measures of capacity for dry moasure are also legalized for wet moasure, and that they are on the binary system, consisting of :-

$$
\begin{array}{lc}
8 \text { Gallons }=1 \text { Bushel. } & 2 \text { Gallons }=1 \text { Peck. } \\
4 \text { do }=\frac{1}{2} \text { do } & 1 \text { do }=\text { The Standard. } \\
\frac{1}{2} \text { Gallon. } & \\
1 \text { Quart. } & \\
1 \text { Pint. } & \\
\frac{1}{2} \text { Pint. } \\
1 \text { Gill. } \\
\frac{1}{2} \text { do }
\end{array}
$$

Requlations and Departienal Instructions.
107. As many enquiries have been from time to time made in Appendix if. relation to the instructions issued by this Department respecting the inspection of weights and measures, I have deemod it best to print them in full, as also the Order in Council under which they have been issued. They will be found in Appendix IV.
108. It will be observed that changes in these instructions have been made from time to time. These changes have been made in order to remove just causes of complaint on the part of those who are affected by them, and in some cases for the parpose of making the instructions to the Deputy Inspectors more distinct and definite. It is the intention of the Department to condenso all the orders issued into one code of instructions, and to embody therein such farther modifications as the greater experience of the Department bas shown to be necessary.

## Spatibtical Returns.

109. In Appendix V, will be found, in a condensedfform, a return of the work performed by the Deputy Inspectors during the.first six months of the carrent year.

Explanatory as to the namber of weights \&c., rejected.
110. In this return there will be found a statement of the number of weights, measuros, \&c., presonted for verification at each office. The number verified, the number rejected, and the number verified afte: the first rejection. In this connection it is necessary to explain that as regards weights, fully ninety per cent. were rejected as inaccurate at the outset of the inspection, but when the owners came to understand what was required, they fell into the practice of passing their weights through the hands of adjusters before presenting them for verification. It thus happened that so soon as the adjusters had provided themselves with correct standards and reliable balances very few weights were presented that did not come within the limit of crror tolerated and as no fees have been charged for the second test of the weights fi:st rejected, the number finally admitted to verification falls but little short of the whole number presented; and, as will be seen, only 156 weights of all denominations were ultimately rejected, which represents the number that were so bad as to be beyond adjustment. Nevertheless, out of nearly 50,000 weights presented, about one-fourth-i. e. 11,978 -only passed the verification after a second or third test.

Tolurated weights.

Number of measures of capacity.

Tolerated measures.

Lireal measures.
111. Of the Tolerated Weights, that is, weights of the old denominations, 56, and 14 lbs., upwards of eight thousand have been presented, of which 275 were finally rejected and 1703 or over 20 per cent. were verified after a second or third test.
112. Out of 37,650 Dominion measures of capacity, 37,650 were ultimately verified and 124 rejected. Out of the number verified, 5,090 , equal to 13 per cent., were admitted after a second or third inspection. As the whole of these measures were new, and usually submitted by the manufacturers before being taken into use, the number ultimately rejectod as well as the number requiring a second test is in both cases loss than it would otherwise have been.
113. Of "Tolerated" measures of capacity, or those based on the old wine gallon or Winchester bushel, the total number prosented for verification during the six months were 1,936 , out of which 218 were finally rejected and 24 verified after a second or third test.
114. Out of 5,538 measures of length presented for verification, 52 were finally rejected and 562 , or about 1 per cent., required a second or third test. From the small number of moasures of length that have been presented for verification, it will be obvious that the stocks of traders who deal in such measures have not been inter fered with by the inspectors.
115. The whole number of balances with equal arms, presented for Balances with verification during the six months, was 5,246 . Out of this number, 32 were finally rejected, and 617 were admitted after a second or third inspection. The total number verified being 5,164 .
116. Of steelyards there were brought for veritication 649, of which Steelyards. 35 were ultimately registered.
117. There were also presented for verification 7,475 weigh bridges Weigh and platform scales, ineluding the Union and ordinary counter scales, bridges and as well as several weigh bridges at railway depôts for heavy loads. Of this number 173 were finally rejected, and 1,086 , or 14 per cent., were admitted after several tests had been made, the total number admitted to verification being 7,302.
11.5. A c humn is placed in the Return for weights of an irregular Iregular description, a grood many of which were admitted by the Deputy Inspectors under a misconception of their instructions. The total number of weights so admitted was 1,941 .
119. A statement more in detail than that above referred to will be found in Appendix VI., wherein will be found the number of each denomination of weights, measures, balances and weigh bridges that have been brought for verification during the six months covered by the Return.

## GENERAL OBSERVATIONS.

120. In the preceding paragraphs I have confined myself to such practical issues as have been pressed upon the consideration of the Department during the brief period in which the law has been in operation. In dealing with them I have only discussed such as are based on reason, and I have only advanced such considerations as will, I believe, have weight with all who have given the matter much attention.

> 121. Expressions of dissatisfaction as to the working of the law, have Vague exreached the Department which have no substantial basis to rest presslong of dissatisfacupon. That these mere fault-findings, which, as a rule, have issued from tion. interested parties, should have made any impression, is somewhat discouraging, and has a tendency to force a conviction that this branch of the public service has not yet cenlisted the sympathy of the general public, fur people appear t) be quite content cither to give over weight, or receive short weight, so long as they have no certain knowledge that they are wronged.

## False

 weights, ${ }^{2}$ c., worse than a debased currency.122. But there are those who do look below the surface, andwho therofore know that false weights and false weighing machines are the means of working greater wrongs in a community than a debased coinage or an inconvertible circulation. The use of false weights and measures is an evil wheh continuously takes tribute from its victims, who, to a large extent, are those who are least able to protect themselves.
123. The injustice thus perpetrated can only be discovered and eradicated by the intervention of strong laws carefully administered. It. is in the smaller classes of shops and where the cheapest weights and measures are used, that the evil exists to the greatest extent. and it is in such places that the greater portion of the wages earned by the industrial classes are expended. To heads of families who are earning from a dollar to a dollar and a half per diem, it is a grave matter whether he receives full weight or full measure.

The wrong done the same whether intentional or not.
124. It is not assumed that every one who delivers short weight or scant measure does so intentionally. It is sufficient to justify the intervention of the law, if it is known that he uses cither intentionally or unintentionally appliances that bring about that result. In either caso the wrong is the same, and it may be confidently stated that weights, measures and weighing machines have been and are largely used that are incapable of a reasonable approximation to accuracy. Every one who desires to have justice done to all parties will wish to see such appliances driven out of use,

## Inspection <br> Important merchants, \&c.

125. Although the Inspection of weights and measures nearly affects the interests of the industrial classes, the merchant and the manufacturer are not less interested. Not many days ago I had an interview with a merchant miller, who informed me that an inspection of his scales had revealed to him that he had been putting two pounds of flour too much into every barrel. Now, that is somewhat more than one per cent., and on $\mathbf{5 0 , 0 0 0}$ barrels of flour-which approximately represents his transactions for the year-the loss, reckoning the value of the flour at six dollars per barrel, would be over $\$ 3,000$.
126. It may hare happened that the scales by which he weighed in and paid for the wheat out of which the flour was made were equally erroneous in the same direction. If that were admitted, we should bat throw back the loss on the farmer, and so establish a strong case in favor of having equitable weighings at both ends of the chain, as well as at its midmost parts.
127. But apart from incidents of this nature, which could be easily multiplied-for we often hear of short delivery under contract and of decisions in relation thereto, which in the absence of uniformity of inspection must be of uncertain value-there are considerations of Higher cona higher order which will doubtless prevail in the long run. I mean the importance to a people who aspire to a place among the nations of the earth of possessing an equitable foundation for all trade transactions. It is one of the surest signs of advanced civilization that the weights and measures of a country shall be in a state to insure equity. It is even a stronger evidence than the state of the currency; and it may be asserted with confidence that the nations that are most advanced in civilization are the nations that have given the most attention to this subject.
128. I have not ventured upon any observationsin relation to the Dominion Standard of Capacity. I have avoided doing so partly because I enterod so largely into that matter in my second Report on Weights and measures. (See p. xix, § § 25-36.) The considera tions I then advanced have not yet been controverted. I there fore beg to reproduce them as sufficient to justify the steps taken in relation thereto :-
" 25 . Some anxiety has been expressed by a few individuals as to the inconvenience that may be occasioned by the introduction of the Imperial measures of capacity in place of those now in use, and there is aloo an impression that the changes will affect lineal meas ures and weights as well as measures ef capacity. There is no real foundation for sucb anxiety. There will be no change in the value either of weights or lineal moasures, and in so far as the change relates to measures of capacity, it is a much less serious atfair than may be imagined.
" 26 . The change in the bushel, half-bushel and peck has hardly iny significance, because all articles of commercial importance, such ay wheat, corn and other grain, as also seeds, are and have been bouglit and sold by weight, the bushel being nothing more than a name signifying a number of pounds determined by law as far back is 189 , and giving no accurate notion of the measure named. Goods sold by dry measures of capacity are comparatively of small value. Generally the custom is to heap the measure, and the difference between the quantities heaped on such measares by one dealer and the quantity heaped on them by another, or the quantity that whould bo heaped on, is frequently greater than the difference between the Imperial and Winchester bushel, which is only 67.772 cubic inches-that is, the Imperial bushel exceeds the Winchester bushel by a little more than 3 per cent.
" 27 . The change from the old wine gallon to the Imperial gallon has more importance, but it is believed that no serious inconvenience will be felt-certainly none that should outweigh the advantages that will ultimately result from the change.
" 28 . The change is not compulsory until 1880. Up to that time the old wine gallon may be used by those who desire to do so, upon
tho condition that in all bargains affccted by it, it shall be specially mentioned. Withont discussing the expediency of this delay, it may be mentioned that it has been allowed in order that the parties; interested may be able to atcommodate themselves to the change. and choose their own time within the limit stated for purchasiag new measures.
" 29. It fortunately happens that the one measure may be converted into the other by the addition of a fifth or the deduction of a sixth. The relation, therefore, which the wine gallon bears to the new Standard is for all practical purposes-and as defined by lawwo easily stated that there is little doubt but traders will rapidly acquire the habit of thinking and dealing in the more convenient measure.
"30. It is more convenient lweanse there is an increasing tendency among traders to determine quantitios of fluids by weight. rather than by measure.
"This is especially the case with reference to spirits and petroleum, and it is certain that quantities may be so determined with much greater accuracy than by any system of measuring or gauging whatever. The wholesale business in petroleum has long been regulated by weight, and the large distillers have for several years past put up their spirits by weight. In practice the only accurate method of determining the capacity of vessels use I for the delivery of fluids is by weighins them when empty, and when fuil of standard water. The ditierence being the weight of water they wilt contain.
"Now the Imperial gallon offers this advantage: It holds exactly ten pounds, avoirdupois of standard water, and as coan rain water approximates when at the ordinary temperature, very nearly to standard water, we have a convenient link, decimally expressed. connecting weight with volume, and therefore a roady means of determining the exact capacity of any vessel without any arithmetical computation. Similarly the quantity of any fluid in Imperial gallons may be determined with the greatest exactness by determining its specific gravity. This is very readily done by the use of a gravity hydrometer, which can be read by any person of ordinary intelligence, and gives at once the weight per gailon in pounds, avoirdupois, of the fluid in which it is immersel. For the specific gravity of any fluid represents the weight per gallon by removing the decimal point one place to the right.
"31. The capacity of a vessel in wine gallons or the quantity of any fluid in wine gallons may, it is true, be computed from specific gravities, but to do this cither a troublesome arithmetical computation is necessary, or a reference to tables.
" 32 . For reasons rlready given but little value is attached to the relation of the gallon to the bushel, but as the bushel has been legaiized, and is sometimes used or referred to, it is obviously more convenient that the gallon should be an aliquot part of it. With the old system this is not the case, for the Winchester bushel containod 9.30918 + wine gallons. The Imperial gallon is the exact eighth part of the Imperial bushel. Heretotore we have had two different systems of measures of capacity-the Winchester for dry measures, and the wine measure for liquids.
"33. Except Newfoundland, the United States is the only country in which the wine gallon is now retained as the legal Standard for liquid measures of capacity, and the Winchester bushel as the Standard for dry measure. In so far, therefore, as the adoption of the Imperial gallon as our standard of capacity affects the externah
trade of the Dominion, the temporary inconvenience that may be felt in the trade with the United States will be more than compensated by the convenience gained in carrying on our trade with other countries.
" 34. On reference to the Trade and Navigation returns it will be found that in 1872-excluding exports of Petroleum which as already stated are regulated by weight-of the whole trade in fluids measured by the gallen only 20 per cent. was with the United States, while 37.4 per cent. was with Great Britain, and the remainder 42.6 per cent. was with France and other countries, whore the Standard is neither the Imperial nor the wine gallon, but in most cases the Litre of the metric system.
"In 1874-when the exclusion of Petroleum from the computation has but little significance because the exports of that article had almost ceased-the trade in liquids with Great Britain amounted to 40.45 per cent of the whole, with the Unitad States 31.23 per cent., and the remainder, 28.32 per cent., was with France and other countries.
" 35 . I have included the West India Islands and Demarara among the countries that have adopted the Imperial Standards, because on reference to the transactions of the Standards Department at Westminster, I find that, from 1851 to 1864 , thirty-seven sets of Imperial Primary Standards havo been verified for those colonies. But it is, of course, guite possible that the old measures may still be tolerated here for some time to come.
"36. No other Standards but those of the Empire are known or tolerated in Australia or Now Zealand, and they were adopted in Vancouver's Island when that Colony was orgarized. The adoption of the Imperial Standard by Canada very nearly effects complete uniformity throughout the English-speaking portions of the British Empire, embracing a population approaching $50,000,000$.

## INSPECTION OF GAS.

Provisions of the act.
129. The Act respecting the inspection of gas and gas meters was proclaimed to take effect on and after the first of July, 1875, but it was some time after that before the offices could be provided and fitted with the requisite standards and apparatus. This was of the leas consequence, inasmuch as under the provisions of the law there is no power to compel the inspection of $t e$ meters then in use more than once in five years. This gives the Companies the option of Cause of so using the meters already fixed for a period of five years, and of this fepmeters privilege they appear to be determinel to avail themselves, as hardly pected. any meters have been presented for verification except such as have been erected for consumer.s who commenced the use of gas after the inspaction was commenced.
130. It is to be feared that when the period approaches beyond which Circular to the use of unstamped meters will be illegal, the number brought for to Gas Com inspection will be greater than can be dealt with. As a precaution
against this result, I have addressod a circular letter to each of the Gas Companies reminding them of the requirements of the law, and if attention is given my suggestions, the business of the gas inspestion offices in the larger places will shortly be increased. In the meantime the amount of work done, as will be seen on reference to Appendix VIII, has been very small.

In view of the circamstances above referred to, I submit that the delay which has occurred in fitting up the offices and in appointing inspectors for the smaller places is not to be regretted.
131. The law is still somewhat deficient in relation to the inspection of gas, as to its illuminating power and its chemical purity. On

Further amendments of the law necessary.

## Tests for purity, \&c., should be made at stated periods

 these points amendment is necessary. As the law now stands, fees can only be collected for the tests for illuminating power and purity when such tests are demanded by the parties interested, and as the Gas Companies will not be likely to demand such tests, and individual consumers will not incur the expense for the benefit of consumers at large, it follows that for this service no fees have as yet been collected.132. It is suggosted that these tests should be made at least once in each week, and oftener when the quantity of the gas made by the Company is deemed sufficiently large to render such additional tests necessary, and that for these regular tests, the fee should be paid by the Gas Company. Should any consumer or other person interested demand special tests for their information, they would, of course, pay the fee, but if the results of the tests taken as $q$ bove proposed are delivered to the Gas Company and regularly posted at the office of the Inspector, all consumers would have sufficient opportunity of knowing the quality of the gas they pay for.

Gas inspection ought not to be a charge on public revenuce:
133. I have proposed the above arrangement because this is a service which certainly ought to be self-supporting, for it only affects the interests of parties residing where gas is manufactured and sold, and the inspection should not be made a charge on the public revenue. It may be added that the Gas Company is the only party from whom the payment of the fees can be demanded.
134. In the appendices to this report there will be found fnll statistical details of the result of the inspection up to 31st December, 1876, including the cost of the outfit of the offices, the current expenses and the receipt.

COST OF FITTING UP OFPICFS.
135. Full details of the cost of fitting up the twelve Gas Inspector's Oost of fitting offices already equipped, will be found in appendix VII, as also of the current expenditure, and of the fees collected. It will be observed that no Inspectors have been appointed at Ottawa, Brantford, Newcastle or Chatham, and I may add that the Inspector appointed at Fredericton has been suspended, while at Pictou the Inspector had not performed any work up to the closing of the returns.
136. I have already explained why I have not pressed for the Not necessary appointment of Inspectors at the smaller places, and I now beg to to fit up smali submit that if these offices, with the exception of London, which will diately. be proceeded with as soon as the building is ready, are fitted up, and the Inspectors appointed next year, they will be in ample time to meet any pressing demands that are likely to be made for their use.

## insireotion of meters.

137. With the exception of a small number of meters brought for Reason for verification by dissatisfied consumers, the meters inspected have been brought by the Gas Companies, and before being presented they have been repaired and carefully adjusted. It has followed, therefore, that a comparatively small number--not more than eight per cent. -have been rejected; but enough is known of their state before being adjusted, to warrant the assumption that if they had been in. spected before adjustment, the per centage of rejections would have been very large.
138. There are in use in the several gas districts of the Dominion a Old meters large number of very old meters. These for reason stated in (§ 129) are logally in use-unless the consumer, in whose use they are, take steps to have them inspected-until five years from the lst July, 1875, or in other words until July, 1880 . If no steps are taken by the consumers to have them inspected, it is not likely that they will ever be verified, for the Company will not submit them Without first having them repaired and adjusted, which, as a rule, will cost more than they are worth. It will never be known, therefore, how many false gas meters have been in use, nor to what extent gas consumers have been wronged by them.
[^13]ILLUMINATING POWER.

## Photometers

 provided.Number of tests for illuminating power.

Number of tests.
140. Photometers have been erected in each of the places mentioned in appendix VII, but they have only been in use at the six places named in appendix VIII. At these places two bundred and ninetyeight tests were taken, and in only three cases was the illuminating power found to be below the standard. Two of these occurred at Toronto, where the standard is twelve candles; and one at St. John, N. B., where the standard is fourteen candles. At both these places the gas has generally been considerably above the standard, the maximum at Toronto being very nearly fifteen candles, while at St. John it was on one occasion as high as twenty-one and a quarter, I submit that an examination of the details of these tests will go far to sustain the argument that there is no substantial difficulty in the way of making the standard at least fourteen candles in Ontario instead of twelve.

## SULPHURETTED HYDROGRN.

## SULPHUR AND AMMONIA.

## Means of

 testing only provided at three places.Impurity of gas in Montreal.
141. The means of testing for sulphuretted hydrogen are furnished with each photometer, and for this kind of impurity 278 tests have been made. Its presence has been detected 49 times, namely, six times in Toronto, thirty-eight times in St. John, and five times in Quebec.
142. The means of testing for these impurities had not been supplied prior to the 1st January last, except at Montreal, Quebec and Toronto. The apparatus in the Department at Ottawa has been for some time in use, and a good many tests have been taken, but as these tests have not been taken under the precise conditions required by the law, they are not inciuded in the return. At Ottawa, the Inspector's Office has been in operation since the second of Janua,yy.
143. In Montreal, the sulphur test has been made eleven times, and in every case the quantity found has bcen greatly above the maximum allowed by law, the lowest average being more than double the standard allowance. The ammonia tests were taken in Montreal on ten occasions, and the quantity present was, in every case, far above the standard. On one occasion it was more than four times, and in no case less than three times the quantity tolerated by law.
144. In Toronto, the test for sulphur was taken nineteen times and in Toronto. quantity tolerated by law, and then only slightly so. Theammonia xxxviii
test was applied on seventeen occasions, and on eleven tests it was found to be in excess, but only to a very small extent.
145. The result of the observations at these two important Standards places, I submit, fully establish the value of the tests for purity, maintained. and show conclusively that as far as sulphur is concerned there is no insuperable difticulty in making gas equal to the standard, and although the ammonia has been found slightly in excess of the standard at Toronto, that excess is so small as to justify the maintenance of the present standard for at least another year.
146. I submit also that the great excess both of sulphur and Insuficiency ammonia in the Montreal gas is strong evidence of the insufficiency of cleansing of the purifying apparatus at the place, and that the consumers would Montreal. be justified in taking steps for compelling the Gas Company to effect a nearer compliance with the requirements of the law.
147. In appendix $X$, a full detail is given of the manner in which the gas standards have been disposed of.

## Respectfully submitted,

A. BRUNEL,

Commissioner.

## Departmert of Inland Revenue,

 10th March, 1877.
## APPENDIX $\mathbf{I}_{\text {, }}$

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## APPENDIX I.

## SCHEDULE OF ALL STANDARDS AND OTHER APPARATUS PROCURED UP TO 31st DEC., 1875.

## DOMINION STANDARDS.

STANDARDS OF LENGTH.
A.-Standard Yard, marked:-

Mr. Baily's Metal.
Standard Yard A.

Primary Standards.
B.-Standard Yard, marked:-

Mr. Baily's Metal.
Standard Yard B.

Troughton \& Simms, Lendon.

Troughton \& Simms, London.
C.-Standard Yard, marked :-

Mr. Baily's Metal. Standard Yard C.
Mr. Baily's Metal. Standard Metre A. Troughton \& Simms,

These standards are bronze bars of square section, having their Description. defining lines traced on gold studs, one at either of the ends of the bars, and sunk to the mid depth of the bars.

## STANDARDS OF WEIGHT.

A.-Standard Avoirdupois Pound of Platinum-iridium.
B.-Standard Avorrdupois Pound of Platinum-iridium.
C.-Standard Avorrdupors Pound of Platinum-iridium.

These standards are cylindrical in form, with a groove near the top.
A.-Standard Troy Ounce of Platinum-iridium.
B.-Standard Troy Ounce of Platinum-iridium.
C.--Standard Troy Ounce of Platinum-iridium.

These standards are in the form of a truncated cone, with a knob at the top.
ef.-Standard Kilogram of bronze.
This standard is cylindrical, with a knob at the top, and with a Description. groove at two-thirds of its height.

STANDARDS OF CAPACITY.
A.-Standard Gallon of Gun Metal.
B.-Standard Gallon of Gun Metal.
C.-Standard Gallon of Gun Metal.

Description. These standards are cylindrieal in form, with plate-glass discs for determining when they are accurately filled. Each standard is marked with its designating letter, thus:--
$\Delta$
Imperial Standard Galion,
Dominion of Canada,
A.D. 1874.
L. Oertling, London.

How secured. The standards designated A, with the kilogram $\mathbb{d}$, are deposited in the Inland Revenue Department, and will only be used for very important official verifications. The standard yard $A$, avoirdupois pound A, Troy ounce A, the metre A and the kilogram $\mathfrak{C}$, are secured in a patent fireproof safe, marked :-

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Dominion of Canada Standards of Length and Weight (A), 1874.
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The Standard Gallon $\mathbf{A}$ is also secured in a patent fireproof safe, marked :-

Dominiun of Canada
Standard Gallon
A,
1874.
L. Oertling, London.

These standards are carefully preserved in the Inland Revenue Department, to be used only for very important official verifications.

How secured. The standards designated B and C are secured in iron boxes, and are lodged respectively with the Speaker of the Senate and the Speaker of the House of Commons. These standards will occasionally be used for comparison with standards A , to discover any change that the primary standards may have undergone, if any.

No. 16.-Standard Yabi of Baily's Metal, similar in form to Description. the Dominion Standard Jards A, B and C. This bar is marked :-
Mr. Baily's ${ }^{4}$ Metal No. 16. Standard Yard at 610, 94^. Fahr. Cast in 1845. and was transmitted by the Astronomer Royal to Canada in 1857.
a. Standard Yard and Metre on the same bar of Baily's Metal. The yard is divided into 3 feet, 16 nails and 36 inches, and with 4 additional inches, making 40 inches in all. The first of the additional four inches is subdivided into tenths and hundredths, the second into twelfths, and the third into sixteenths. The metre is divided into decimetres, subdivided into centimetres, and an additional centimetre into millimetres.

The divisions up to 36 inches are marked upon gold studs let into the bar and made level with the bottom of a trench, depressed about $\frac{1}{25}$ th of an inch below the upper surface of the bar. The other divisions are marked upon a slip of gold let into the bar, and extending slighty beyond the 36 and 9 inch divisions.

> a, $b$. Staninard Ten Feet Line and bed measure of steel, with Ten feet two 10 -feet end measuring rods. The 10 -feet bed and line measure standards is marked a, and the two end measures $a$ and $b$. The 10 -feet line measure is divided into feet, and the first foot subdivided into tenths of a foot. The defining lines at zero, $1,4,7$ and 10 feet respectively, are engraved on gold studs let into the bar.
a. Standard Six Feet bed and line measure of steel, with one 6-feet end measuring rod, each marked $a$. The line measure is divided into feet, and the first foot subdivided into tenths of a foot.

Standard One Hundrad Feet Chain, divided into feet.
a. Standard Sixty-Six Feet Chain, divided into links.
a. French Metre, engraved on a flat brass bar, marked on left end " Collot Fréres, Paris," divided into decimetres and centimetres, and ten centimetres at either end subdivided into millimetres.

## STANDARDS OF WEIGHT.

$a, b$. 2 Sets Avoirdupois Standard Weights, of gilt gun metal, each set consisting of $50,30,20,10,5,3,2,1, .5, .3, .2, .1, .05 .03$, $.02, .01, .005, .003, .002, .001$ lbs., and $8,4,2,1$ ozs., and 8, 4, 2, 1, $\frac{1}{2}$, $\frac{1}{2}$ drachms.
$a, b$. 2 Sets of Standard Dedimal Grain Weights, each set consisting of $1,000,600,300,200,100,60,30,20,10,6,3,2,1, .6, .3, .2$, $.1, .06, .03, .02, .01$ grains.

[^14]a. 1 Set Standard Metric Weights, consisting of $20,10,5,2,2,1$, kilogrammes; $500,200,100,100,50,20,10,10,5,2,2,1, .5, .2$. 1 , $.1, .05, .02, .01, .01, .005, .002, .002, .001$ grammes.

1 Set of Standard Metric Weights, marked C. F., consisting of the following : $20,10,5,2,1$ kilogrammes, $500,200,100,100,50$, $20,10,10,5,2,2,1, .5, .2, .1, .1, .05,02, .01, .01, .005, .002, .002$, .001 grammes.

1 Set of Metrac Weights in iron, consisting of the following :$50,20,10,5,2,1$ kilogrammes; 5, 2, 1, $\frac{1}{2}$ hectogrammes.

1 Set of U.S. Standard A voirdupois weight, consisting of 50,30 , $20,10,5,3,2,1$ lbs., 8, 4, 2, 1, $\frac{1}{2}, \frac{1}{4}$ ounces.

## STANDARDS MEASURES OF CAPACITY.

a, b. 2 Sets of Standard Imperial Meabures of Capacity, each set consisting of 1 bushel, $\frac{1}{2}$ bushel, 1 peck, 1 gallon, $\frac{1}{2}$ gallon, 1 quart, 1 pint, $\frac{1}{2}$ pint, 1 gill, $\frac{1}{2}$ gill.

1 Set Standard Imprrial Measures of Capacity, consisting of 1 gallon, $\frac{1}{2}$ gallon, 1 quart, 1 pint, $\frac{1}{2}$ pint, 1 gill, $\frac{1}{2}$ gill.

1 Set Standard Metric Measures of Capacity, consisting of double-decalitre, decalitre, demi-decalitre, double-litre, litre, demilitre, double-decilitre, decilitre, demi-decilitre, double-centilitre, centilitre.

3 Twenty-Ouncr Mrasuring Glasses, graduated.
3 Ten-Ounce Glass Measuring Flasks, graduated on neck.
1 Flask to hold one thousand grains of distilled water at $62^{\circ}$ Fahrenheit, with thermometer and stand.
balances, comparing apparatus, de.
Balances.
1 Bellion Balance, to carry 60 lbs in caeh pan, and to turn with .1 grain.

1 Balance to carry 50 lbs in each pan, and to turn with .1 grain.
1 Balance to carry 50 lbs in each pan, and to turn with .1 grain.
1 Balance to carry 7 lbs in each pan, and to turn with .02 grain.
1 Balance to carry 1 kilo. in each pan, and to turn with .02 grain.

1 Balance to carry 5 lbs in each pan, and to turn with .02 grain.
1 Balance to carry 5 lbs in each pan, and to turn with .02 grain.
1 Balance to carry 8 oz . in each pan, and to turn with .01 grain.
1 Balance to carry 8 oz . in each pan, and to turn with .01 grain.
1 Large French Balance, to carry 50 kilos. in each pan.
1 Large French Balance, to carry 20 kilos. in each pan.
1 French Hydrostatic Balance for determining the specific gravity of pewter measures.

1 Frencl Balance to carry 5 kilos. in each pan.
1 French Balance to carry 1 kilogramme in each pan.
1 French Balance to cariy 200 grammes in each pan.
1 French Balance to carry 50 grammes in each pan.
1 Frence Balance Basclee, with appurtenances.
1 French Travelding Kit.
1 Dominion , do in mahogany case.
1 Dominion do in leather case.
1 Micrometrical Comparing Apparatus, for the comparison of line standards of length, furnished with microscopes, lamps, \&c.

1 Contact Apparatus, for use with the micrometrical-comparing apparatus when comparing end measures of length.

1 Comparing Apparatus, with eye piece and yard and metre. Comparing The yard on one edge divided into eighths, and one eighth into apparatus. sixteenths, also divided into inches, three inches at either end being subdivided, one into eighths, a second into twelfths, and a thi 4 into sixteenths. The metre on the other edge divided into decimetres, subdivided into centimetres, ten centimetres at either end being again subdivided into millimetres. The temperature at which the yard was determined was $62^{\circ}$ Fahr., and the metre at $32^{\circ}$ Fahr., or zero centigrade. With this instrument are provided a supplementary inch and centimetre, the inch divided into hundredths on One side and sixty-fourths on the other, and the centimetre into millimetres and fifths of a millimetre.

3 Callipers for inside and outside measurements by English and metric measure, the larger instrument being also arranged to measure depths.

1 Whitworth Measubing Machine, to measure to the 10,000 th of an inch, including three end measures, respectively 1 inch, 3 inches, 6 inches and 1 foot long.

1 Cathetometer for measuring the relative height or distances of the graduations of a measure placed vertically, and for measuring the height of a column of mercury, furnished with level, telescope and vernier, giving indications to the 1,000 th of an inch.

1 Engraving Machine, with box of plates, \&c.

## GAS STANDARDS.

1 Cubic Foot Bottle and Transferrer.-This is the primary standard of gas measures, and is provided with appliances for regulating the pressure at which air issues from it; and with thermometers, for indicating the temperature.

1 Portable Cubio Foot Bottle and Transferrer.-This instrument is for the purpose of verifying the heavy gras insjection standards in their local positions.

1 Ten Cubic Feet Gasholder, provided with a scale divided into Gasholdor. 50 the of a cubic foot, and with compensation arm and weight, thermometers, and pressure gauges.

1 Five Cubic Feet Gasholder, provided with a scale divided into 100 ths of a cubic foot, and with compensation arm and weight, thermometers, and pressure gauges.

1 One Hendred Light Standard Test Meter with dial divided, to indicate from the 100 th of a cubic foot to 1,000 cubic feet, levelling screws, water level gauges and thermometer to indicate the temperature at the outlet of the meter.

## Meters.

1 Twenty Light Standard Test Meter, win alal gdivided to indicate from the 100th of a cubic foot to 1,000 cubic feet, levelling screws, water level gauges, and thermometer to indicate tho temperature of gas at the outlet of the meter.

1 Sulphur and Ammonia Testing Apparatus, complete-awith chemicals, \&c.

1 Рhotometer, for testing the illuminating power; ${ }^{\prime \prime}$ of gas with dark chamber, \&c.

## BAROMFTERS, THERMOMETERS, \&c

1 Standard Barometer in glass case, with scale on brass tube, vernier to indicate the 500th of an inch, and thermometer 'incase and an tube.

1 Standard Barometer in glass case, with 3scale on glass tube, vernier, to indicate the 500th of an inch, and thermometer in case and on tube.

6 Fahrenheit Thermometers, long bulb.
6 Centigrade Thermometers, long bulb.
3 Fahrenheit Thermometers, short bulb.
3 Centigrade Teermometers, short bulb.

## MISCELLANEOUS APPARATUS, FITTINGS, \&o.

2 Screw Presses and adjuncts.
1 Levelling Plate.
1 Set Frenci Pewter Measures.
1 Set Dominion Copper Measures.
1 Box of Letter Punches.
1 Box of Figure Punches.
3 Balances, marked Dominion of Canada.
1 Stand for holding beams of large balances whilst comparing the relative distances of the extremo knife odges from the centro knife edges with the cathetometer.

10 Ten-Feet Deal End Measures.
50 Three-Feet Deal End Measures.
These are for the testing of chains, tapes, \&c.

## OFFICIAL STANDARDS AND COMPARING APPARATUS.

14 Comparing Apparatus, with eye piece and subdivided yard.
14 Sets of Stanidard Avoirdupois Weights, each set consisting of $50,30, ะ 0,10,5,3,2,1, .5, .3 . .2, .1, .05, .03, .02, .01, .005, .003, .002$, .001 pounds; $8,4,2,1$ ounces ; 8, 4, 2, 1, $\frac{1}{2}, \frac{1}{2}$ drachms.

10 Sets of Standard Troy Weights, each eet consisting of 500 , $301,200,100,50,30,20,10,5,3,2,1, .5, .3, .2, .1, .05, .03, .02, .01$, $.005, .003, .002, .001$ ounces.

14 Bullion Balances, to cary 50 lbs. in §each pan, and to turn with 1 grain.

14 Balances to catry 5 lbs. in each pan, and to turn with .02 grain.

14 Balances toreary 8 ozs. in each pan, and to turn with .01 grain

## LNSPECTION STANDARDS AND COMPARING APPARATUS.

100 Comparing Apparatus, with standard subdivided yards and eye pieces.

100 Sets of Imperial Standard Measures of Capacity, each set consisting of 1 gallon, $\frac{1}{2}$ gallon, 1 quart, 1 pint, $\frac{1}{2}$ pint, 1 gill, $\frac{1}{2}$ gill.

100 Sets of Standard A voirdypois Weights, each set consisting of $50,30,20,10, \tilde{5}, 3,2,1, .5, .3, .2, .1$ pounds; $8,4,2,1$ ounces; 8 , 4, 2, 1, $\frac{1}{2}, \frac{1}{2}$ drachms.

100 Sets of Standard Grain Weights, $1,000,600,300,200,100$, $60,30,20,10,6,3,2,1, .6, .3, .2, .1$ grains.

100 Sets of Standard Decimal Weights, .5, .3, .2, .1, .05, .03, .02, $.01, .005, .003, .002, .001$ of a pound.

100 Bullion Balances to carty 50 lbs . in each pan, and to turn with .1 of a grain.

100 Balances to carry 5 Ibs. in each pan, and to turn with .02 of a grain.

100 Balances to carry 8 ozs. in each pan, and to turn with .01 of a grain.

4,106 Iron 50lb Weiciuts for testing weighbridges, platform scales, \&c.

60 Portable Travelling Kits, for the use of Deputy Inspectors when on an inspection tour.

## GAS INSPECTION STANDARDS.

20 Ten Cubic Feet Gas Holders, provided with scales divided into 50 ths of a cubic foot, and with compensation arms and weights, thermometers and pressure gauges.

10 Five Cubic Feet Gas Holdras, provided with scales divided into l00ths of a foot, and with compensation arms and weights, thermometers and pressure gauges.

20 One Hundred Light Test Meters, with dials divided to indicate from 100th of a cubic foot to 1,000 cubie feet, leveling screws, water level gauges and thermometers to indicate the temperature at outlets of meters.

20 Twenty Light Test Meters, with diols divided to indicate from 100th of a cubic foot to 1,040 cubic feet, levelling screws, water level gauges, and thermometers to indicate the temperature of gas at the outlets of the meters.

20 Photometers for testing the illuminating power of gas.
Note.-Two of these instruments were provided with dark hambers, curtains and benches, similar to the Departmental Photometer for Quebec and Montreal; the remaining 18 without dark chambers and benches to be fitted to suit the positions which they might be intended to occupy.

4 Ammonia and Sulpiur Testing Apparatus, complete, with chemicals, \&c.

## APPENDIX II.

## Memorandum on the Extra work imposed on this Department by the rerification of Standards for Canada.

'This memorandum is drawn up chiefly for the purpose of shewing the amount of work of comparison and of verification of Standards imposed on the Officers of this Department by the Government of Canada during the year 1874-5.

Although it is the custom of this Office to verify Standards, not only for our Colonies and Dependencies, but also for foreign Governments, as well as in aid of scientific researches; yet this Department has never had so large a number of Standards to compare in so short a period as it bas recently done for the Government of Canada.

The requirements of the Canada laws made it necessary that the several Standards should be verified tor the use of Canada, within a certain period, and this limitation to time particularly increased the Ordinary work of the Officers of this Department.

Within a period of nine months there have been verified for the use of Canada no less than 3,500 Standard Weights; 100 Standard Measures of Length; 70 Standard Gas Measures; 700 Standard Measures of Capacity. How much this number is in excess of the Ordinary number of Standards verified in this Department for a period even of twelve months, may be seen from the following printed statement:-
Table of Number of Local Standards of Weights and Measures officially verified and re－verified at the Standards Department in eaih Year since 31st March， 1859.

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The verification of the measures of length (involving 8,300 separate comparisons, for the parts and whole length of each yard measure were compared) the comparison of the gas measuring standards, as well as the general superintendence of the work of comparing the standard weights, was undertaken by Mr. Newport. The actual comparisons of the avoirdupois weights, and the measures of capacity were made by Mr. Spencer. Mr. Sellar, who was assisted by Mr. Ridler, had much extra work imposed on him, in consequence of Mr. Spencer being engaged on the Canada work.

So large an influx of extra work necessarily much interfered with the ordinary arrangements of the office, but by working early and late (beyond the official hours, $11 \mathrm{a} . \mathrm{m}$. to $5 \mathrm{p} . \mathrm{m}$.) the officers of this Department have been able to complote the verification of the Canada standards within the time required by Mr. Brunel, as well as to carry on successfully the ordinary official work.

In accordance with the request of the Warden of the Standards, and the desire of the Commissioner of Inland Revenue of Canada, I beg to submit a rate of remuneration or duty-pay that may bo awarded to the officers of this Department, such rate being based on the scale of remuneration adopted in this country for extra duties, and work of a specfal character :-

$$
\begin{aligned}
& \text { Mr. Newport.......................................... £150 } \\
& \text { Mr. Spencer........................................... } 75 \\
& \text { Mr. Sellar...... ............................. ........ } 20 \\
& \text { Mr. Ridler............................................... } 10 \\
& \text { £255 }
\end{aligned}
$$

A large amount of preparatory work of a monotonous and mechanical kind had necessarily to be performed by the messengers and mechanies of this Department, and I beg to submit also the following rate of remuneration to these officers, based, as far as can bo ascertained, on the rates at Her Majesty's mint:-

> D. Porter....... . . ........................................ £25

Robinson................................................... 15
Ellacott. 15
Medden ....... . . . . . . . .......... . . . . . . . . . . . . . . . 5
Olding . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5
£65

HENRY J. CHANCY, Chief Clerk.

September 2, 1875.
etails of Expenditure for Equipment and Contingencies, with Memo


## 40 Victoria. <br> Sessional Papers (No.4.) <br> A. $187 \%$ <br> DIX III.

randum of Fees Collected, for six months ending December 31st, 1876.

| $\begin{aligned} & \text { Value } \\ & \text { of } \\ & \text { Office } \\ & \text { Furniture, } \\ & \text { \&c. } \end{aligned}$ | Expenditure. |  |  |  | Date on which operations were commenced. | Returns. (Fees collected.) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Office Rents. | Travelling Expenses and other Contingencies. | Salaries. | Total. |  |  |
| \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |  | \$ cts. |
| 6330 | 3000 | 10183 | 25000 | 38183 | Oct. 7........ | 11395 |
| 9934 | 3125 | 6280 | 25000 | 34405 | do $3 \ldots . . . .$. | 44325 |
| 12522 | 3750 | 1477 | 30000 | 35227 | Dec. 9........ | 12865 |
| 6500 | 1800 | 1980 | 25000 | 28780 |  |  |
| . |  |  | 25000 | 25000 |  |  |
| 3097 | 4500 | 7416 | 25000 | 36916 | June $26 . . . . . .$. | 47505 |
| 74.36 | 6250 | 6331 | 25000 | 37581 | Oct. 10.. ...... | 41370 |
| 6100 | 6000 | 9650 | 25000 | 40650 | do 4...s.... | 25285 |
| 8495 | 2666 | 4089 | 25000 | 31755 | Dec. 11........ | 11560. |
| 7776 | 3000 | 8969 | 25000 | 36969 | Aug. 19........ | 32315. |
| 3600 | 3750 | 11065 | 25000 | 39815 | Juse 14......... | 44370 |
| 17427 | 7500 | 15293 | 35000 | 57793 | Aug. 12........ |  |
| 7382 |  |  | 35000 | 35000 | do $12 \ldots . . . .$. | \} 2,128 10 . |
| 7382 | 5000 | 3520 | 25000 | 33520 | do 12......... |  |
| 6175 | 5000 | 2890 | 30000 | 37890 | June 2........ | 31130 |
| 4663 | 3750 | 1978 | 30000 | 35728 | Sept. 25......... | 13205 |
| 6650 | 2666 | 7243 | 25000 | 34909 | Dec. 4......... | 6145 |
| 8805 | 2500 | 3050 | 35000 | 41450 | Aug. 1......... | 38150 |
| 6500 | 3750 | 3310 | 25000 | 32060 | Dec. 4......... | 3215 |
|  |  |  | 25000 | 25000 | ................... |  |
| 3200 | 6000 | 2690 | 25000 | 33690 | Nov. 18..................... | 31625 |
| 7270 |  | 19250 | 50000 | 69250 | Aug. 28......... | 90580 |
| 7032 | 9000 | 3875 | 25000 | 37875 | do 2........ | 66455 |
| 6500 | 1800 | 4952 | 25000 | 31752 | ................... |  |
| 11410 | 6000 | 5811 | 30000 | 41811 | Sept. 2........ | 12065 |
| 6933 | 6250 | 6540 | 25000 | 37790 | Nov. 14......... | 6145 |
| 3290 | 2500 | 8365 | 25000 | 35865 | May 20......... | 40210 |
| 5709 | 4000 | 21351 | 30000 | 55351 | Aug. 6........ | ग,063 30 |
| 8470 | 13500 | 19594 | 50000 | 83094 | May 3........ | 84270 |
| 9500 | 4000 | 5336 | 30000 | 39336 | Oct. 3.. ...... | 22495 |
| 7701 | 6000 | 2509 | 25000 | 33509 | June 30......... | 19450 |
| 6394 | 4000 | 4215 | 25000 | 33215 | Aug. 1......... | 25035 |
| 5480 | 4000 | 3325 | 25000 | 32325 | do 2........ | 14290 |
| 8465 | 4000 | 4855 | 30000 | 38855 | Sept. 5......... | 16405 |
| 9535 | 4000 | 6364 | 25000 | 35364 | Oct. 31......... | 7845 |
| 17345 |  | 4405 | $\left\{\begin{array}{l}45000 \\ 35000\end{array}\right.$ | 84405 | May 31........ | 2,169 00, |
| 7245 | 5000 | 2483 | - 25000 | 32483 | April 11........ | 19660 |
| 7515 | 5000 | 5095 | 30000 | 40095 | Aug. 21......... | 20130 |
| 3481 | 3333 | 4229 | 25000 | 32562 | ISept. 4......... | 9050 |
| 8807 | 6000 | 8192 | 30000 | 44192 | July 21......... | 56863 |
| 9500 | 4000 | 6491 | 30000 | 40491 | Uct. 11........ | 8225 |
| 2,901 44 | 1,663 90 | 2,555 51 | 12,100 00 | 16,319 41 |  | 14,490 75 |


| inspection Divisions. | Deputy Inspectors. | Date on which Standards were supplied. | Value of Standards and Apparatus. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
|  |  |  | Value of principal Standards. | Value of 50 lb. Iron Standards. | Value of Portable Kits. | Total Value. |
| Quebec. |  |  | $\$$ cts. | \$ cts. | \$ cts. | $\$ \mathrm{cts}^{\text {d }}$ |
| Beauce ......... .... J. B. Mercie: ......... |  | Sept. 4..... | 66000 |  |  | 66000 |
| Beauharnois ...... | C. B. Dewitt ......... | May 2...... | 66000 | 8000 | 17000 | 91000 |
| Bellechasse ........ | F. Lamontagne. | Sept. 4..... | 66000 |  |  | 66000 |
|  | A. Coutu ............. | do 4.. ... | 66000 | ..... ..... | ................. | 66000 |
| Berthier. <br> Chambly | E. Lamoureux ...... | do 4...... | 66000 | ................. | ....... ........ | 66000 |
| Chambly Obamplain | H. A. Cinq-Mars.... | do 4...... | 66000 | ......... ....... |  | 66000 |
| Drummond.. ..... | P. N. Pacaud........ | do 4. | 66000 |  |  | 66000 |
| Gaspé $\qquad$ <br> Hull <br> do $\qquad$ | G. M. Michaud.......\| | do $4 \ldots .$. | 66000 |  | ..... .......... | 66000 |
|  | A. Quesnel............ | June 1..... | 66000 | 16000 | ................ | 82000 |
|  | P. Lynch...... ........ | July 18.. | 66000 | .. ......... | ....... ...s..... | 660 |
| Iberville........... | J. M. Larue........... | Sept. 4..... | 66000 |  | ............... | 66000 |
|  | J. L. B. Desroches.. | do 4...... | 66000 |  |  | 6600 |
|  | J. O. Chamberland | ..... |  |  | ........ ........ | $\cdots$ |
|  | N. Grenier ... .. ..... |  |  | ........ ........ | ................ | .....00000 |
| Labrador .......... <br> Laval | H. Lalonde.... ....... | Sept. 4..... | 66000 |  |  | 66000 |
| Levis ........ ...... | A. Leveque .......... | Aug. 22... | 66000 | 8000 |  | 74000 |
|  | H. Q. de St. George | Sept. 4..... | 66000 | -1..... |  | 66000 |
| Missisquoi......... | B. A. Haskell... .. .. | May 26..... | 66000 | 8000 |  | 740 |
| Montmagny ...... | N. Nadeau............. | Sept. 4..... | 66000 |  |  | 660 |
|  | T. Larue .............. | do 4..... | 66000 |  |  | 660 |
| Montreal............  <br> do $\ldots . . . . .$. <br> do $\ldots . . . . .$. <br> do . <br> do...... D | L. N. Roy............ S. Quinn........... D. Lyons.......... O. Fauteux....... | July 5...... | 66000 | 40000 | ................ | 1,060 00 |
| Quebec $\qquad$ <br> do $\qquad$ | Jos. Gregoire <br> E. Dubord. | do 5...... | 66000 | 16000 | 17000 | 99000 |
| Richelieu............ | Chas. Blais............ | Sept. 4..... | 66000 |  |  | 660 00 |
|  | D. Ouellet. ............ |  |  |  |  |  |
| Saguengy $\qquad$ <br> Sherbrooke $\qquad$ | H. Simard............. | July 4.. | 66000 | 8000 | 17000 | 910 |
|  | H. J. Pennoyer....... | Sept. 4..... | 66000 |  |  | 660 |
| St. Hyacinthe..... <br> Terrebonne $\qquad$ <br> Three Rivers | F. L. Desriviers...... | Aug. 22...... | 1,320 00 |  |  | 1,32000 |
|  | Thos. Lamb.......... | May 12...... | 66000 | 16000 | 17000 | 99000 |
|  | L. A. Lord ..... ...... | Sept. 4 | 66000 | 8000 |  | 74000 |
| Three Rivers. |  |  | 17,820 00 | 1,280 00 | 68000 | 19,780 00 |
| Fredericton $\qquad$ <br> Kings $\qquad$ | E. C. Freeze .......... June 26...... |  | 66000 | 8000 |  | 74000 |
|  | W. 0. Slipp.......... | Dec. 16..... | 66000 | ........... |  | 6600 |
| Moncton........... | J. T. Cutler........... |  | ............ |  |  |  |
|  | R. B. Cutler......... |  | ................. |  |  | .......0'0 |
| Restigouche...... | P. Blanchard......... |  |  |  |  |  |
|  | Jas. Macfarlane ..... | A pril 13...... | 66000 | 40000 | 17000 | 1,23000 |
| Woodstock........ | Wm. Dibblee.... ..... | do 11...... | 66000 | 8000 |  | 7400 |
|  |  |  | 2,640 00 | 56000 | 17000 | 3,370 00 |

## With Memorandum o Fees Collected, \&c.-Continued.



Details of Expenditure for Equipment and Contingencies,

su

| Prorince of Ontario...... ...................... ........... | 25,44600 | 4,800 00 | 2,380 00 | 32,626 00 |
| :---: | :---: | :---: | :---: | :---: |
| do Quebec................................................ | 17,820 00 | 1,280 00 | 68000 | 19,780 00 |
| do New Brunswick............................. | 2,640 00 | 56000 | 17000 | 3,370 00 |
| do Nova Scotia ......................... ... ..... | 6,94300 | 1,200 00 | 68000 | 7,823 00 |
| do Manitobe. ..................................... | 66000 | 8000 |  | 74000 |
|  | 53,509 00 | 7,920 00 | 3,910 00 | 64,339 00 |

With Memorandum of Fees Collected, \&c.-Concluderl.

yary.

| 2,901 44 | 1,663 90 | 2,555 51 | 12,100 00 | 16,319 41 | ..... ${ }^{1}$ | 14,496 75 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1,214 87 | 1,659 89 | 1,107 74 | 8,850 00 | 10,617 63 |  | 14,496 1,965 |
| 23270 | 9000 | 52398 | 2,000 00 | 2,613 98 |  | -811 95 |
| 58190 | 38666 | 1,016 21 | 2,750 00 | 4,152 87 | ... | 2,42685 |
| 10426 | 12000 | 35270 | 30000 | 77270 |  |  |
| 5,035 17 | 2,920 45 | 5,556 14 | 26,000 00 | 34,476 59 |  | 19.70075 |

## APPENDIX IV.

## Weights and measurej.

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## APPENDI: IV.

## Department of Inland Revenue, Ottawa, 187.

Sir,-Herewith you will receive a letter appointing you a Deputy Letter of Inspector of Weights and Measures for the Inspection Division of appointment.

You will also receive a form of Bond which must be executed and returned to this Department without delay.

An Invoice accompanies these papers showing the value of the Invoice. Standardss and apparatus that will be forwarded to you for use so soon as your Bond, duly exocuted, is received here and the sureties joined with you therein are approved.
In.the meantime you will proceed to carry out the instructions contained in Circular No. 101, also enclosed.
I have again to caution you against unpacking or attemping to Caution as to set up or use the apparatus until proper tables are supplied to set use of stanthem on, and until you have thoroughly informed yourself as to the dards. proper manner of doing so.

## I remain, Sir,

 Your obedient servant,> A. BRUNEL,

Commissioner.
To.
Deputy Inspector of
Weights and Measures.

Circular No. 101.

> Departixint of Inland Revbnue, Ottawa, 187.
Sir,-In the performance of your duty as a Deputy Inspector of Weights and Measures you will comply with the following instruc-tions:-

1. Your first duty will be to select in some central and convenient Selection place, a room or office-unless such room has already been pro- offices. vided by the Department. This room should be abont 16 foet by 24 feet, and it is desirable that there should be a small room attached, Which can be used as an office, in which the books, forms and stamps may"bo securely kept. The room must be well lighted, and must have a strona, level floor, freo from vibration. If the floor vibrates or shakes when walked on, the room will be entirely unsuited for the service. The entrance to the room must be of liberal width, opening on the street. It must be secured by a strong door with a grod lock, and all windows must be secured by shutters furnished with inside bolts.

Not to close ease till instructed.

Uffice furniture.

Provision of water.

Visit to
Traders.

No coercive measures to be taken.

To endeavor to comply with the requirements of parties.

To use all due diljgence.
2. So soon as a suitable room has beon fou d, you will acquaint this Department with the terms on which it can be had, and await final instructions bofore closing the lease.
3. It is proposed that the furniture shall be supplied by the Department of uniform pattern, but should you be instructed to provide it, you will contorm to the following Schedule:--..

| Table No. 1, for large balance | Length. 6 ft . | Breadth. 2 ft . | Height. 2 ft 6 in |
| :---: | :---: | :---: | :---: |
| " 2, " two small do. | 8 ft . | 2 ft . | 3 ft 6 in . |
| 3, " measures of capacity | 6 ft .1 | $3 \mathrm{ft}$.6 i | 2 ft 6 in. |
| 4, " lineal standards | 4 ft .6 in | 2 ft . | 2 ft 8 in . |

The whole to be strongly made, with bottom rails to legs, the frame of hardwood, and with two inch pine tops.

4 When there are no waterworks available, it will be necessary to make arrangements for obtaining a supply of water. A tank will in any case be necessary, and should bo placed above or as near as possible to the coiling of the room. Under the tank thero must be a sink for carrying off waste water. In the absenco of waterworks, a cheap force-pump may be used for filling the tank, and the supply should bo taken from a rain-water cistern.
5. A small fireplace or furnace will be necessary for heating the branding irons for stamping wooden measures.
6. Haging secured a suitable room you will devote your tima to making yourself acquainted with all places of businoss within'the limits of your division, where weights, measures, or weighing machines are bought, sold, or used for commercial purposes; and you will, so far as practicable, personally visit such places, leaving with the person who carries on the business-or his agent-a copy of the Circular No. 102, and, also, a copy of the Act above cited. When a personal risit is not practicable, the documents may be forwarded by mail.
7. You will bear in mind that no coercive mensures are to be immediately used by officers of this Department for compelling parties to have their weights, measures, de., verified. The object of the Department is to proceed with as much deliberation as is consistent with a due administration of the law and with its intention to have all weights and measures verified within the current fiscal year.
8. It may happen, however, that many persons will be anxious to have their weights and measures verified as early as possible, and you will be expected to do all within your powor to meet their wishes. But it is not expected that much will be accomplished within the first three months after your appointment, beyond serving the above-mentioned notices, and making yourself acquainted with the nature and use of the instruments intrusted to your care.
9. You will be expected to use all diligence in qualifying youry self for the proper performance of your duties, especially in making yourself acquainted with the provisions of the statute relating thereto. And you are to bear in mind that your appointment will lapse, if, within six months after it is made, you are nnable to establish your qualifications by passing in a creditable mannor such an examination as may be approved by the Minister of Inland Revenue.
10. A duplicate invoice of the value of the standards and instruments intrusted to your care is onclosed herewith, and you are emphatically warned that you will be held strictly liable for their safety, and that you and your sureties will be required to make good the cost of repairing or replacing any damage or loss they may sustain while in your custody, other than what is due to necessary wear
and tear, during the careful and intelligent use of the standards and apparatus for the purpose for which they are designed. And you are to observe that the regulations of the service prohibit their use for any other purpose whatever.
11. As these standards and apparatus are of a delicate and costly Caution as to character, you cannot be too cautious in their use, and should you have any difficulty in understarding how to set up the balances, or care of standards. as to the use of any of tho instruments, you will at once apply to this Department for instructions or advice, and you will not attempt to set them up or use them until you are fully satisfied that you are competent to do so.
12. At as early a date as may be found practicable, you will To submit prepare and submit to your Inspector, Mr. , a repor't stating the places within your division at which in your opinion it will be tour of desirable that you should attend for the verification of weights, measures, \&c., under the 23rd Section of the Act. And you will at the same time submit an itinerary, stating the days on which you propose to be at the places mentioned, as also the routes and distances by which they may be mostenveniently reached.

> I beg to remain, Sir, Your obedient servant, $$
\text { A. BRUNEL, }
$$ Commissioner.

To.
Deputy Inspector of Weights and Measures.

Oircular No. 102.
$W . \& M$.

> Department of Inland Revenue, Ottawa, 14th October, 1875.

Sir,-Herewith you will receive a copy of the Act 36 Victoria, Notice to be chap. 47, respecting the inspection of Weights and Mcasures.

1. You will observe that inspectors are by this Act prohibited delivered to traders. from adjusting either weights, measures, balancos, or weighing machines, and you are therefore requestod to see that your weights, inearmes. \&e., are properly adjusted and in working order before submatimg them for veritication.
2. It is not the intention of this Department to insist with unreasonable urgency upon the immediate verification of weights, measures, \&c., especially as a considerable period will necessarily be occupied in performing the manual labour comprised in a complete general verification But this Department hopos to have the cordial co-operation of all parties interested in such steps as may be necessary for accomplishing the first verification within the fiscal year 1875-6.
3. It is, however, necessary that you bear in mind that should any complaints be lodged against. the use of unstamped or illegal weights, weighing machines or measures, it will be within the powor of any person aggrieved to take action under the law, and although it will be competent for His Excellency in Council to remit penalties, you may be subjected to annoyanoe and tiouble should you fail to comply with the law within a reasonable time after you have an opportunity for doing 80.
4. Your attention is especially directed to section 5 of the Act aboyo cited. Under this clause the use of the bushel either by weight or measure as a unit for determining quantities of the articles mentioned in the schedule contained in the section was abolished from the 1st of January, 1874.
5. The use of the Winchester bushel and wine gallon, with their

Winchester bushel, wine gallon, \&c.

Caution as to stamps. schedule, is by the same section made permissive until 23rd May, 1880, upon the condition that the use of such measures shall be specifically mentioned and agreed to by bath parties to the sale or delivery.
6. The attention of railway companies, carricrs and others, whose business requres the use of a large number of weigh-bridges, platform scales, or other weighing machines, weights, measures, \&c., is especially directed to section $\because 7$ of the Act above cited; and it is suggested that such partics may save much trouble and annoyance by employing some competent person to examine and maintain in a proper state of repair all such weights, measures, and weighing apparatus as they may employ in their business.
7. Whenever it is discovered that a weight has lost the lead plug bearing the verification stamp, or is otherwise damaged, it should at once be adjusted and sent to the inspector for verification.
8. The same course should be followed with reference to any measure of capacity that may be damaged by being indented or otherwise knocked out of shape.

1 have the honaur to be, Sir,
Your obedient servant, A. Brunel, Commissioner.
To..................... .... .....
(Sec. 36 Vic., chap. 47, An Act respecting Weights and Measures.)

Department of Iniand Revenue, November 1, 1875.

Copy of Regulations approved by Order in Council of 26th .July, 1875, under the Provisions of 36 Vic., Cap. 47.

# Regulations as to the Description of Balances and Weíghing Machines that will be Admitted to Verification. 

The following balancos are to be admitted to verification:

## A. Balances having Equal Arms.

B. Balanceb commonly known as Steelyards, or Roman Balances, having Unequal Abms.

1. The beam shows no perceptible difference as regards the form of the two arms.
2. It is provided with a tonguo pointing upwards or downwards from its centre at right angles with a line joining the extreme bearings.
3. It is in equilibrium when a line joining the extreme bearing is perfectly horizontal, and returns to that position after boing put into vibration.
4. Its arms are equal within the specified limit of error.
5. The balance is sufficiently sensitive to be turned decidedly and promptly by the addition or withdrawal of so much of the load as represents the error tolerated by regulations.
6. No balance balls or other detached parts other than the pans are used for adjusting the balance.
7. The balance, as a whole, is of sufficient strength, and on a sufficiently stable base, to secure it against change of form or position under the maximum load it is to carry.
8. The beam will carry its maximum load without deflection.
9. The maximum load for which it is $t$ ) be used is distinctly engraved or marked on the beam.
10. The knife edges are permanently fixed to the beam.
B.----Balances commonly known as Steelyards, or Roman Balances, Steelyards having unequal arms, are only to be admitted to vr rification when:--
11. There is sufficient room for oscillation, and the knife edges on which the beam oscillates are sufficiently fine to permit it to move freely.
12. The beam is sufficiently strong to carry its load without deffection.
13. The bottom of the notches by which the divisions of the long arm of the lever are indicated, and from which the weight is suspended, are in a right line drawn through the knife edges forming the points of suspension, and when sach straight line passes near to and a little above the centre of gravity of the whole apparatus.

[^15]5. The weight usod with the lever is somelmultiple or sub-multiple of the pound avoirdupois, and has distinctly marked on it its tiue weight.
6. The maximum weight intended to be weighed onit is distimfly marked on the beam.
7. The position of equilibrium is indicated by a tongue or pointes exactly vertical when the line defined in Section 3 is horizontal.

Wcigh bridges in platform scales.
C.---Weigh Bridges, Hay Scales, and Platform Scales will only $h$, admitted to verification when :---

1. The foundation or supporting baso is sufficiently firm, an I capable of carrying, without change of level or of form, or other disturbance, the maximum load for which it is to be used.
2. If movable from place to place, some satisfactory arrangement such as a level or plummet is provided and permanently attached for indicating whether the machine is perfectly level.
3. The platform is so arranged that any obstruction to its frec movement can be easily detected.
4. All the beams, levers and other parts are of sufficient strength to carry the maximum load to which they will be respectively subjected, without deflection.
5. The knife edges are firmly and permanently fixed in the levers, have sufficient room to permit free oscillation, and are suff. ciently firm.
6. The oscillations are sufficiently evident.
7. The weights used with the instrument are equal to the avoirdupois pound or to multiples or authorized sub-multiples of the avoirdupois pound, plainly marked with their actual weight, and with the weight they are intended to indicate on the scale.
8. The weights used as above are a decimal sub-multiple, $\frac{1}{10}$, $\frac{1}{1}$, $\bar{T}^{1} 0^{1} \overline{0}$ of the load indicated by them.
9. There are no movable balls or detached parts for the adjustment of the balance accessible, or so placed that they can be changed without breaking a seal, or without the change coming to the knowledge of the Deputy Inspector.
10. The apparatus indicates the same weight whether the load is placed in the centre of the platform, on one side of it or at either corner.
11. The maximum load which the apparatus is intended to weigh is conspicuously marked on some essential part of it.

No balances other than such as will come within the conditions under one or other of the heads A., B. or C., are to be verified or stamped.

## Schedule A.

OF WEIGHTS ro be Admittedto Verification.


## Schedule B.

Of the FORMS OF WEIGHTS that will be admitted to Verification.

| Forms of Dominion Weights. |  | Forms of weights tolersted till July 1st, 1878. <br> Avoirdupois Weights. |
| :---: | :---: | :---: |
| Avoirdupois Weights. | Troy Weights. |  |
| From 50 lbs. down to one pound, cylindrical, with knob. <br> The same, with ring. <br> Rectangular block, with ring or handle cast solid. <br> Truncated square pyramid. <br> From 3 lbs. down to onehalf dram. Any of the, above forms; also flat discs in nests. <br> grain weights. <br> From 1,000 grains down to ten.grains. Cylindrical, with a small rising stem and knob. <br> Six grains and under. Bent platinum or aluminium wire, so bent as to represent the number of grains or decimal parts of a'grain. <br> In every case the denomination of the"weight when of ${ }_{-}^{\prime}$ sufficient ${ }^{F}$ size, must cast, ": engraved or stamped on " them in bold, legible numersls, of a size duly; prou portioned to the size of the weight. | From 500 ounces down to one ounce. Truncated cone with knob. <br> From 5 ounces down to .001 ounce, flat square plates. <br> The denomination to ?be engraved on the top of the knob of each weight, in as large numerals as the size of the weight will admit; and also on the face of the smaller weights. | The ordinary bell shape. <br> Flat discs for 4 lbs. and under. <br> Rectangular blocks, with rings or with handies cast solid. <br> Truncated square pyramids with rings. <br> In every case the denomination of the weight must be cast, engraved or stamped on thers in bold, legible numerals, proportioned to the size of theweight. |

Of FEES to be Collected for Verification of Weights, under the Order in Council of 26th July, 1875.

DOMINION WEIGHTS.


Of the DOMLNION MEASURES OF CAPACITY that may be Admitted to Verification.

| Denominations. | Materials. |
| :---: | :---: |
|  | May be made of- <br> 1. Bronze or brass, cast. <br> 2. Hammered Sheet Brass or Copper, strengthened by rimsoof similar metal, and upright straps. <br> 3. Sheet iron, strengthened by iron rim top and bottom, and by upright straps. <br> 4. Wood-oak, elm or ash-with iron rim. |
| A.-Bushel. Half Bushel. |  |
| Peck. |  |
|  |  |
|  | $\left\{\begin{array}{l}\text { May be made of- } \\ \text { 1. Bronze or Brass, cast. } \\ \text { 2. Hammered Sheet Brass or Copper, } \\ \text { with suitable rim of similar } \\ \text { metal. } \\ \text { 3. Hard Pewter. } \\ \text { 4. Stout Tin Plate of approved } \\ \text { quality. }\end{array}\right.$ |
| B.-Tallon. <br> Half Gallon. |  |
| Quart. |  |
| Pint. Half Pint. |  |
| Gill. |  |
| Half Gill. |  |

1. Note.-Every measure must have cast, engraved, stamped or branded on it its denomination or capacity in bold, legible characters, duly proportioned to the size of the measure.
2. No measure of capacity of which the sides or bottom are indented, battered or knocked out of the regular form, will be admitted to verification.

## Schedule E.

MEASURES OF CAPACITY that will be tolerated until the 23rd of May, 1880, under the Act of 36 Vic., cap. 47, sec. 5, s. s. $2 \& 3$.
$\qquad$
The Winchester Bushel and the Wine Gallon, with their submultiples, when made of any of the materials specified for the Dominion measures of corresponding names, may be verified, and certificates of such verification granted, when it becomes necessary for the determination of quantities in any special cases that may arise under the provisions of the Act above cited.

In all such cases the standards to be used for such verification are to be specially applied for to the District Inspector, and mast be returned to him as soon as the purpose for which they were obtained is accomplished.

## Schedule F.

FORMS OF MEASURES OF CAPACITY that may be admitted to verification.

| Dominion Measures. | Measures tolerated under Sec. 5 <br> of 36 Vic., Cap. 47. |
| :---: | :---: |
| Cylindrioal. | Cylindrical or Conical. |
| For the Bushel, Half Bushel and the depth must not be <br> less than four-ninths of the <br> diameter. | In no case to be verified if the <br> sides or bottoms are battered, <br> indented or otherwise put out <br> of their original and regular <br> shape. |
| For the Gallon and smaller mea- <br> sures, the depth shall not be <br> less than the diameter. |  |

## Schedule G.

Or FEES to be collected for verification of Measures of Capacity, under the Order in Council of July 26, 1875.

| Cominion | MEASURES. |  |  |  |  | Tolerated Measures till 1880** |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Material. |  |  |  |  |  |  |
|  |  |  |  |  | - | Denominations. | 号 |
|  | cts. | cts. | cts. | cts. | cts. |  | cts. |
| Bushel................. | 50 | 50 | 50 | ... | 25 | Bushel ...... ...... | 50 |
| $\frac{1}{2}$ Bushel. | 40 | 40 | 40 | $\ldots$ | 20 | $\frac{1}{2}$ Bushel.......... | 40 |
| Peck................... | 30 | 30 | 30 | $\ldots$ | 15 | Peck .. | 30 |
| Gallon.................. | 25 | 15 | ... | 15 | ... | Gallon ....... ...... | 25 |
| $\frac{1}{2}$ Gallon............... | 15 | 10 | ... | 10 | $\cdots$ | $\frac{1}{2}$ Gallon.......... | 15 |
| Quart................... | 10 | 10 | $\ldots$ | 10 | $\ldots$ | Quart.............. | 10 |
| Pint .................... | 5 | 5 | $\ldots$ | 5 | $\ldots$ | Pint .... | 5 |
| $\frac{1}{2}$ Pint................. | 5 | 5 | $\cdots$ | 5 | $\ldots$ | $\frac{1}{2}$ Pint............. | 5 |
| Gill. | 5 | 5 | $\cdots$ | 5 | $\ldots$ | Gill. .............. | 5 |
| $\frac{1}{2}$ Gill.............. ...... | 5 | 5 | $\cdots$ | 5 | $\ldots$ | $\frac{1}{2}$ Gill.............. | -5 |
| Set from Bushel to Peck $\qquad$ |  | 100 | ... | .. | 50 |  |  |
| Set from Gallon to $\frac{1}{2}$ Gill. $\qquad$ | 50 | $5{ }^{\prime}$ | ... | 50 | ... |  |  |

## Schedule H.

Of FEES to be Charged for the Verification of Weigh-Bridars, Platform Scales, Weighing Machines, Balanoes and Sterlyards.

| Balaycrs with Equal Arys- |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| To weigh 5 lbs and under in |  |  |  |  |
|  | from 5 lbs. to 50 |  |  | 0 |
| " | from 50 lbs . to 100 |  | ... |  |
| * | from 100 lbs . upwards | " |  |  |

Stemi-Yafdg with Dividid Arn-
To weigh 500 lbs . and under.....
" 600 to $1,000 \mathrm{lbs} . . . . . . . .$. ................ 0
" 1,000 to $2,000 \mathrm{lbs} . . . . . . . . . . . . . . . . . . . . . ~ \cdot 100$
" 2,000 lbs. and upwards........... ... 1 50)
To be verified at the Deputy Inspector's Office. If verified elsewhere, cost of cartage of weights used for verification to be charged extra.

Balamcis with Unequal Arms, not Dividhd-
To weigh 1,000 lbs. and under.................... \$0 75
.. 1,000 lbs. to $2,000 \mathrm{lbs} . . . . . . . . . . . . . . . \mid 100\}$ Same as above as to cartage.
" 2,000 lbs. and to 4,000 lbs.......... 150


## Schedule I.

Of Lineal Measures that may be admitted to Verification.

Denominations. Material.



## Schedule K.

Of Fees to be Charaed for Verification of Lingal Measures.


## WEIGHTS AND MEASURES.

Schedule of Remedy or Allowance for Error.
AVOIRDUPOIS TEIGETS.


BULLION WEIGHTS.

| Troy oz. | Grains. | Grains. | Troy oz. | Grains. | Graine |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }_{400} 60$ | $\underset{0.1}{\text { Grains. }}$ | ${ }_{0.5}^{\text {Grains. }}$ | 500 | Grains. | ${ }_{\text {Grainm }}^{\text {O.5 }}$ |
| 400 300 |  | " | 400 | " |  |
| 300 200 | " | " | 300 | " | " |
| 200 100 | " | " | 200 | " | , |
| 100 60 | 0.25 | 0.125 | 100 | 0.25 | $0 \cdot 125$ |
| 60 40 | " | " | 50 40 | " |  |
| 30 | " | " | 40 30 | " | " |
| 20 | " | " | 30 20 | " | " |
| 20 5 | 0.025 | 0.0125 | 10 | 0.025 | 0.0125 |
| 5 | " |  | 5 |  | " |
| 4 | " | " | 4 | " | " |
| 3 | " | " | 3 | " | " |
| 2 | " | " | 2 | " | " |
| 1 0.5 | 00005 | $0 \cdot 0025$ | ${ }_{0}^{1}$ | 0.005 | 0.0025 |
| 0.5 0.3 | " | " | 0.5 0.3 | " | " |
| $0 \cdot 2$ | " | " | 0.3 0.2 | " | " |
| $0 \cdot 1$ | " | " | $0 \cdot 1$ | " | " |
| 0.05 | " | " | 0.05 | " | " |
| $0 \cdot 04$ | " | " | 0.04 | " | " |
| 0.03 | " | $\because$ | $0 \cdot 03$ | " | " |
| 0.02 0.01 | " | " | 0.02 | " | " |
| 0.01 0.005 | " | " | 0.01 0.005 | " |  |
| 0.005 0.004 | " | " | 0.005 0.004 | " | " |
| $0 \cdot 0.13$ | " | " | 0.003 | " | " |
| 0.002 0.001 | " | " | 0.002 | " | " |
| 0.001 | " | " | 0.001 | " | " |

## DECIMAL GRAIN WEIGHTS.

| Stamdards. |  |  | Trade Weights. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Denomination of Weights. | Actual <br> Allowance in Excess. | Actual Allowance in Deficiency. |  | Actual Allowance in Excess. | Actual Allowance in Deficiency. |
| 4000 grains. | Grains. 0.05 | Grains. 0.025 |  | $\underset{0.05}{\text { Grains. }}$ | Grains, |
| 2000 | ${ }^{6}$ | 0.6 | ${ }_{2000}^{4000}$ grains. | 0.05 | ${ }_{6} 6$ |
| 1000 | " | 1 | 1000 | " | " |
| 500 | 0.04 | 0.02 | 500 | 0.04 | 002 |
| 300 | " | " | 300 | " | " |
| 200 | " | " | 200 | " | " |
| 100 | " | ${ }^{6}$ | 100 | " | " |
| 50 | $0 \cdot 02$ | 0.01 | 50 | $0 \cdot 02$ | 0.01 |
| 30 | ، | " | 30 | " | ، |
| 20 | 14 | 6 | 20 | " | 6 |
| 10 | " | ${ }^{6}$ | 10 | * | 16 |
| 5 | 0.01 | 0.005 | 5 | 0.01 | 0.005 |
| 3 | " | " | 3 | " | " |
| 2 | " 6 | " | 2 | " | " |
| 1 | " | " | 1 | " | " |
| 0.6 | 0.005 | 0.0025 | 0.6 | 0.005 | $0 \cdot 0025$ |
| $0 \cdot 3$ | ' | " | 0.3 | " | 4 |
| $0 \cdot 2$ | " | " | 0.2 | " | " |
| $0 \cdot 1$ | " | ${ }^{\circ}$ | $0 \cdot 1$ | " | " |
| 0.06 0.03 | 0.0025 | 0.00125 | $0 \cdot 06$ | 0.0025 | $0.00125$ |
| 0.03 0.02 | $\stackrel{\text { " }}{0.002}$ | 0.001 | 0.03 0.02 | 0.002 | $\begin{gathered} 6 \\ 0.001 \end{gathered}$ |
| 0.01 | 6 | 6 | 001 | , 6 | *6 |

measures of length.


## MEASURES OF CAPACITY.



## Platform scales, weigh bridges and balances WITH UNEQUAL ARMS.

All these weighing machines will be rejected,
1st. When, with a full load and truly balanced, the movement
of the lever weight, one "noteh" or division on the graduated lever, in either direction, does not cause the lever to turn decidedly in ecordance with such movement;

2nd. When with a full load, or with any less load, and with the
balance in equilibrium, the addition or removal of one two-thousandth part of the load, to or from the load, does not turn the lever decidedly in accordance with such addition or removal.

## Department of Inland Revenue, <br> Ottawa, 15th March, 1876.

Sir,-In pursuance of the provisions of the Act respecting Weights As to tour of
and Measures, Section 23, it will be necessary for you to make inspection.
arrangements for attending at the principal places within your
$D_{\text {istrict on days to be named by you. }}$
Before incurring any expenses or making any definite arrangements, you will fill in replies to the enclosed questions and forward them to this Department without delay, when the necessary instructions will be forwarded.

> I beg to remain,
> Your obedient servant,
Enquiry as to 1. At what places will it be population. necessary, in the interests of the public, for you to attend for the purposes named in Section 23 of the Act respecting Weights and Measures? Name the population of each place, and approximately the number of persons who are likely to hare Weights and Measures inspected.
2. How many days will it be necessary for you to remain at each place?
3. How many miles of travel will be required to make the full tour of your Division?
4. In what order will you visit the several places?
5. What is the distance from place to place in the order named in your reply to Question No. 4?
6. Assuming that the apparatus to be carried will consist of a box containing the large Balance, measuring $38 \times 39 \times 31$ inches and weighing 200 lbs ; the Standards of Weight in two boxes, one $22 \times 11 \times 11$ inches, and the other 19 x $13 \times 13$ inches, weighing 180 lbs. ; Standards of Capacity in a box $19 \times 12 \times 30$ inches, weighing 95 lbs. ; and the Portable Kit, weighing 27 lbs. What mode of conveyance will be used in each case?
7. Will it be possible to obtain temporary accommodation at each place in which to transact the business of verification, and at what cost?
8. At how much do you estimate the cost of making a complete tour of the places named by you?
Question. Answer.

Circular No. 112.
$W . \& M$.

$$
\begin{aligned}
& \text { Department of Inland Revenue, } \\
& \text { Ottawa, } 1876 .
\end{aligned}
$$

Further notice to be

Sir,-As you are now furnished with the Standards for use in your office, you are to proceed al once with the duties of Inspection; you will, therefore, notify the parties who are sabject to the law-

36 Vic., cap. 47-that you are prepared to inspect their Weights, sent to Measures and Balances as they are brought to your office, naming traders. the day on which you desire to have them presented.

These notices should not be issued simultaneously, but in succes- Notices? not sion, selecting the chief traders for the first and continuing them to to be issued others as may be justified by the progress made. The place named simalin the notice as the place of inspection will, of course, be either your head office or such place as may be selected under section 23 of the Act.

A supply of the form of notice to be used is issued herewith. In filling in the blanks jou will take care not to notify for inspection more than can be completed within the time available.

When the day named by you is unsuitable to the parties notified, you may make such other appointments, not involving any unreasonable delay, as may be naturally agreed upon, but you are not thereby to prolong or increase the cost of your tour of inspection.

> I beg to remain, Your obedient servant, $$
\text { A. BRUNEL, }
$$ Commissioner.

To....................................
Deputy Inspector of Weights and Measures.

## Inspection of Weights and Measures.

Act 36 Vic., Cap. 47
To........... .....................
Take notice that on ..I shall be prepared to in- Form of spect and verify the Weights, Measures and Balances used or kept notico. for sale by you, on your presenting them at

I beg to direct your attention to the 27 th section of the Act above cited, and which, for your convenience is printed with this notice; and to inform you that if after the day above mentioned, you continue to use or sell Weights. Measures or Balances in violation of the provisions of the said Act, proceedings will be taken against you as required by law.

> Deputy Inspector of Weights and Measures.

Division of

## Penalties.

$$
\text { Act. } 36 \text { Vic., Cap. } 47 .
$$

Sec. 27. Every trader, manufacturer, carrier, public weigher, Extract from gauger, measurer, surveyor, or other person, who, after the expira- Act. tion of the time appointed under this Act for the first inspection in the Inspection Division in which he carries on his business, offers for sale or uses, for any purpose of buying, selling or charging for the carriage of any goods, wares, merchandise or thing, or of measuring any work, land, goods, materials or other thing, for the purpose of charging for or ascertaining the price to be paid or the charge to be
made therefor, any weight, measure, or weighing machine which has not been duly inspected and stamped according to this Act, or which may be found light, deficient or otherwise unjust, shall be guilty of an offence against this Act, and shall, on conviction, incur a penalty of not more than fifty or less than five dollars for each such offence; and every such unstamped, light, deficient or unjust weight, weighing machine or measure so used, offered for sale, or found in his possession, shall, on being discovered by the Deputy Inspector, be forfeited and forthwith seized and broken by him, without suit or other authority than this Act.

Circular No. 113.
W. \& M., \& G.

## Department of Inland Revenue, Ottawa <br> $\qquad$

Instructions as to deposits of monies collected.

Memo: For the guidance of Inspectors and Deputy-Inspectors of Weights and Measuros, and Gas, as to the deposit of collections on account of inspection.

1. The Inspector or Deputy-Inspector will deposit his collections in the Bank of Montreal or such other Bank as may be directed. He will take the money to the Bank with a specification thereof stating it to be on account of weights and measures, or gas inspection, as the case may be, and make a requisition for a draft in favour of the Receiver General.
2. Attached to the draft which will be given by the bank to the depositor, will be a bank receipt in triplicate: one copy of the receipt called the "original," will be filed in the Inspector's office for reference; the draft and the remaining copies of the receipt must be immediately forwarded to this Department.
3. Doposits are to be made weekly, or as much oftencr as the amount collected reaches fifty dollars.
4. The collections of each month are to be kept distinct, and on the first of each month a draft is to be transmitted for a sum, however small, which will exactly close the transactions of the previous month.
5. Except when post office money orders are used for remittances, each draft is to represent the collections of a certain day or days.
6. No portion of the money collected is to be expended by the Inspector or Deputy-Inspector, or applied by him to any purpose whatever, the payment of his salary and authorized contingencies being otherwise provided for.
7. In divisions where no bank is available, and where there is a money order post office the remittance may be made by a P. O. order in favour of the Receiver General; but, in such cases, the depositor will take care that all his remittances, except that to close a month, are in even amounts of $10,20,40,60,80$, or 100 dollars.
8. If the Inspector or Deputy-Inspector is prevented by duties of inspection from making his weekly deposits at the usual place, he will for this purpose take advantage of any money order office on his line of travel.
9. The commission charged for money orders will be repaid to the depositor by this Departmont and must not be deducted from the amount of the deposit.

To

## A. BRUNEL, <br> Commissioner.

Circular No. 114.
$W$. \& M.

Department of lnland Revenue,<br>Ottawa

Instructions for the use of Official Envelopes, and mailing Cor- Instructions respondence, Returns, \&c., relative to the Inspection of Weights, as to use of Measures and Gas.

## Envelopes:

No. 2. Foolscap size, white, $\left\{\begin{array}{c}\text { are to be used for all official } \\ \text { letters addressed to this } \\ \text { Department. }\end{array}\right\}$-Free.
E. 3. Post do blue, for Bank Receipts and Drafts. do
E. 6. Foolscap do do $\left\{\begin{array}{c}\text { For all official returns made } \\ \text { on the printed forms. }\end{array}\right\}$ do
E. 6. Post do do For Requisitions and Receipts. do

In all cases write "W. \& M.," or "G.," under the designating No. of the envelope in the upper left hand corner, and on the left hand lower corner, the name of your Division.

All correspondence with parties outside of this Department to be mailed in ordinary business envelopes prepaid.

All Official Circulars distributed by you, when not delivered in person, are to be mailed without envelopes, or in an open wrapper, under a one cent stamp.

In asking for envelopes, be particular to quote the designating letter and number exactly as printed.

A. BRUNEL,<br>Commissioner.

To.
Inspector of.
.........................

Circular No. 115.
$W$. \& $M$.

## INSTRUCTIONS

TO INSPEOTORS AND DEPUTY INSPROTORS OF WEIGHTS AND measures.
A.-O. 9. The first form to be used is a Requisition from a person Instructions demanding the verification of Weights, Measures, Balances, \&cc. as to use of books and forms.
B.-O. 10. The next to be used is an Official Receipt for Weights, Measures, Balances, \&c., received for verification, the whole to be carefully filled out in Form and Stub as shown in the sample sheet.

Instructions C.-From O. 10, the name of the person demanding verification, his as to ube of books and forms. residence and occupation with particulars of the articles to be verified will be entered in Day Book O 3, in which book will also be entered, in column for that purpose, a progressive number for each entry, and the folio of the Register in which the particulars of verification will be found, also the date of removal of the articles, to whom delivered and by whom removed.
D.-In O. 1. Register of Weights and Measures verified, will be entered the name of person demanding verification, progressive number in Day Book, folio in rejection register (when any of the articles are rejected) date on which verification was completed, particulars of verification of avoirdupois Weights, Mcasures of Capacity and Lineal Measures-particulars to be entered thus: When the Weight or Sheasure is in excess of the Standard with which it has been compared, the excess will be entered in the column marked + (plus) immediately under the denomination of Weight or Measure verified; and when the Weight or Measure is found to be deficient, the deficiency will be entered in the column marked-(minus); there will also be entered in this book the total fees collected for such test or verification, and the folio of Cash Book to which said fees are carried.
K.-O. 2. is a Register of the verification of Troy Weights and decimal subdivisions of the avoirdupois pound, and is used in the same manner as O.1. above described.
F.-O. 12. is a Register of tolerated avoirdupois Weights and Measures of Capacity, and will be used in the same manner as Register O. 1.
G.-O. 5. is a Register of Weights and Measures rejected for their inaccuracy, in which are entered as in O. 1. the name of person from whom the articles were received, his place of business, \&c., when received, when rejected, with particulars of test on which they were rejected shown under their proper heads by the signs + (plus) and-(minus) the folio of Register from which they were brought and the pragressive number in the Day Book.
H.-O. 6.is a Register of Balances, Steelyards, Platform Scaley, \&c., veritied in which are entered the name of person from whom received, his place of business, progressive number in Day Book, particulars of test written out in full under the head "Remarks," total amount of fees collected for such verification, and folio of Cash Book to which said fees are carried.

L-O. 15. is a Register of Balances, Steelyards, Platform Scales, \&c., rejected for their inaccuracy, and is to be used in the same way as 0.5 , with the exception that in this book the particulars of test are entered as written remarks, and not by the signs plus and minus.
J.-O. 4. is the Cash Book kept in the usual debit and credit form, in which are entered on the debit side the date, progressive number in Day Book, folio of and number of Register, the name of the person from whom payment was received, the stamps used and total amount received from each person, and on the credit side the date, the Bank in which the money is deposited, and the amount.
K.-O.11. is a form of Notice of the completion of verification of Weirhts and Measures. \&c., with statement of fees charged for verification, as per sample sheet.
L.-O. 7. is an Indenture with particulars of verification of Weights and Measures, on which are attixed the stamps required to cover the amonnt of fees charged for verification, with their numbers, de., as shown on sample sheet, the particulars of test to be carefully entered on the endorsation in duplicate, as shown on back of sample sheot.
M.-O. 1. B. is the form of indenture for Balances, \&c., without endoration.
N. U. 14, is a form of requisition for blank Forms, Books, Stationery Applications dc.. in which are to be filled in, name of division, place where forbooks, office is located, consecutive No. of Requisition, designating No., forms a, stamps. description and quantity or number of forms, \&C., required with signature below.

O 0 13. Pay List.-The Deputy Inspector will fill up two copies of the Pay List in accordance with the figures on the last Pro Forma List sent to him, one of which is to be immediately forwarded to this Department, and the other when he presents bis cheque for payment, is to be left at the Bank. The name of Bank is to be inserted in the blank left for that purpose, and under this the officer will sign his name on the line on which the amount of his salary appears. The officer will be careful to fill up endorsation on back of Pay List before forwarding to the Department.

I' $\quad$ (16. Monthly Return of Stamps.-Statement A. is to be filled Retnres of upon the first day of each month for the month just then closed stamp. and forwarded to the Department by the first mail thereafter. It will be seen that on the debit side, column 6 , will be the aggregate of columns 2 and 4, and column 7 the aggregate of columns 3 and 5 . On the credit side the figures for column 14 are found by adding columns 8,10 and 12 , and the addition of columns 9,11 and 13 will form the amount to be placed in column 15, column 6 must agree with column 14, and column 7 with column 15. Statement B. is intended to show the total amount collected during the month, and at what dates, and in what Bank these collections are deposited to the credit of the Receiver-General. No balances or collections will be permitted to be carried forward from one monthly account to the next. It will therefore sometimes be necessary to make a deposit on the first day of a month to close the transactions of the previous month, and such deposit must be entered on the return for the month in which the amount was collected.
(l-No. 11. General Contingent Account.-At the end of cach Contungencie quarter of the fiscal year (or oftener if the advance made to inect contingencies is likely to be exhausted) a statement of expenses incurred is to be prepared, when, if possible, vouchers are to be procured from the parties to whom the money is paid. The particulars of items for which receipts cannot be obtained are to be neatly written on fouscap paper. Each separate 4-6**
voucher is to be entered on Form No. 11, the amounts placed in the appropriate columns and extended into the "total" column. All the vouchers will then be attached to the "Contingent Account," at the upper left hand corner, the whole neatly folded and endorsed, and forwarded to the District Inspector, who, after examination and approval, will mail it to the Department. Upon approval by the Commissioner, a cheque for the full amount will be issued, thus maintaining the "adrance" at its original amount. An exception will be made, howcyer, in the case of the last account for the fiscal year, when, if the account be less than the "advance" the Deputy Inspector will deposit the difference to the credit of the Receiver-Gencral as a "refund of Weights and Measures contingencies," obtaining therefor a draft, \&c., as in the case of collections. If the amount exceed the "advance," a cheque will be issued for the difference. Thus in either case, a complete settlement of the contingencies of the fiscal year will be arrived at, and a new "advance" will be made early in the following year.
R.-Regulations as to the supply and use of Weights and Measures stamps in accordance with the provisions of the "Weights and Measures Act," 36 Vic., cap. 47.

Supply of Stamps.-Adhesive stamps will be supplied by the Department on requisition being made by the Deputy Inspector of Weights and Measures, who will be careful to make requisition sufficiently in advance to insure having at all times a supply on hand to meet the demands of his Division.

The stamps for Weights and Measures inspection are of the following denominations

| J. 1 | value 5 | cents. | J. 6 value 50 cents |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| J. 2 | * 10 | " | J. 7 |  | \$1.00 |  |
| J. 3 | 15 | " | J. 8 | " | 1.50 | " |
| J. 4 | " 20 | " | J. 9 | " | 2.00 |  |
| J. 5 | " 30 | " |  |  |  |  |

How to keep: S.-On receipt of a parcel of stamps, the Deputy Inspector is imaccounts of stamps. mediately to count them, and if they are found to be in accordance with the form of receipt accompanying the parcel, he is to sign, date and return the receipt by the next mail, and enter the stamps on the debit side of the account hereinafter mentioned; if they are not correct he must immediately advise the Department of the error and enter the exact number received by him to the debit of his stamps account. A separate account of euch denomination of stamps is to be kept by ea-h Deputy Inspector of W. \& M. by way of debit and credit, stating on the Dr. side the number received, and on the Cr . side the number issued; in the form attared to inside of cover of Label Book $O$. 8 , in which form it will be observed that the footing of column No. 13, added to the last line of column No. 14 will, if the account is truly kept, equal the footing of column No. 7. The entries in column 14 will show the exact number on hand at any given date.
T.-Use of Stamps.-After filling up an indenture of verification, and after the fees for such verification have been paid, a stamp or stamps, representing the amount of fees chargeable for such
verification, will be securely affixed by the Deputy Inspector of W. \& M. to the space left blank for that purpose on each indenture of verific: tion, form O. 7 or O. 7 B ; the indenture will then be deliverel to the party owning the Weights and Measures or Balances.
U.-The cancellation of stamps is to be effected by the Deputy Inspector of W. \& M. immediately after affixing them to the indenture of verification, writing across the blank space in the middle of each stamp; bis initials and the date as shown in samples.

## A. BRUNEL, <br> Commissioner.

## Amended Instructions for Stamping Indentures.

(Books O. 7 and O. 7 B.)
On receipt of the fees due hereon, the stamps will be attached in Instructions this space, and must be cancelled by the Deputy Inspector writing as to stamping across the white space on each. the date on which they were at- indentures. tached, with his initials, and the holder of the certificate will observe that it is of no value unless the stamps mentioned in the text are attached to it. The larger denominations of stamps are to be used as much as possible, the smaller only for small fees, or to make up amounts which can not be made by the larger ones. On no account are the stamps woverlap each other.

The endorse on form O. 7 must in all cases be filled in. Attach this slip to your book of instructions.

# DEPARTMENY OF INLAND REVENUE. <br> (Stanards Branch) <br> <br> DIMENSIONS OF MEASURES OF CAPACITY. 

 <br> <br> DIMENSIONS OF MEASURES OF CAPACITY.}

Dimensions to give correct capacity.


# Inland Revenue Department, <br> Ottana, 187 

## Memo. to Deputy Inspectors of Weights and Measures.


#### Abstract

Instructions - All Weights, Measures and Balances upon being duly verified are as to stamp-- to be stamped by the Deputy Inspector. When Weights, Measures ing balances. and Balances are constructed of cast iron or other metal than brass, pewter or lead, soft metal plugs to receive the stamps must be provided and inserted by the owner; (see Section 42, Cap. 47, Weights and Measures Act) ; except that Balances, Weigh-Bridges, and similar weighing machines that have the maker's name and a progressive number by which they may be clearly identitied impressed upon some essential part of them, need not be stamped, as it will in such cases be sufficient to insert the maker's name and number in the indenture of rerification.


A. BRUNEL,<br>Commissioner.

Circular No 117.
$W . \& M$.

> Iepartment of Inland Revenue, Ottawa, May $271 \mathrm{~h}, 1876$.

As to pay lists . Sir,-As therehas been much neglect of the instructions of the Department respecting the forwarding of pay lists by Deputy Inspectors of Weights and Measures, I have to call your attention to my letter of 28th February last, and to the "note" on the back of the pay list itself, having reference to this matter, and to inform you that unless your pay lists are hereafter signed, endorsed and mailed to this Department according to the instructions referred to, orders will be sent to the banks to refuse to honour your cheques.

> I am, Sir,
> $\quad$ Your obedient servant,

A. BRUNEL,<br>Commissioner.

> W. \& M.

> Department of Inland Revenue, Ottawa, June 21st, 1876.

Sir,-As it has been decided to admit to verification measures of Thickness of capacity made of tin plate, when of sufficiont strength, I beg to sheet metal inform you that the following descriptions of tin are the lightest of meapacity. that will be admitted to be used for this purpose:

| Gallon and Half Gallon. $\left\{\begin{array}{l} \text { D. XX. weighing } 147 \mathrm{lbs} \text { or to } 100 \text { sheets ; } \\ \text { No. } 24 \text {, weighing } 15 \frac{1}{2} \text { lbs. to the sheet. } \end{array}\right.$ | Dimentions of Sheits. <br> [16 ${ }^{\frac{3}{4} \mathrm{in} .} \mathrm{x} 12 \frac{1}{2}$. <br> 30 in. $\times 72$. |
| :---: | :---: |
| Smaller Meaburib. <br> D. X. weighing 126 lbs. to 100 sheets. | Dimmsioys of Shimts. $16 \frac{3}{4} \text { in. } \times 12 \frac{1}{2} .$ |

> I remain, Sir, Your obedient servant, $$
\text { A. BRUNEL, }
$$ Commissioner.

To the Deputy Inspector of Weights and Measures,

Eircular No. 119.
$W . \& M$.
Department of Inland Revenue, Ottawa, 26th June, 1876.

Sir,-Making reference to Circular No. 113, Sec. 7, I have to Post Office direct you to have all Post Office Orders made payable to the Com orders. missioner of Inland Revenue, instead of to the Receiver General.

> I hare the honor to be, Sir, Your obedient servant, $$
\quad \text { A. BRUNEL, }
$$ Commissioner.

Circular No. 120.
W. \& M.

> Department of Iniand Revenoe, Ottawa, June 28 th, $187 \%$.

Care of standards.

Sir,-In the performance of your duty as a Deputy Inspector of Weights and Measures, you will caretully comply with the following instructions:

1. The bronze standards of weight are in no case to be handled otherwise than with the weight-lifters supplied for that parpose.
2. The standards of Weight and the Measures of capacity must be kept free from dust by simply removing the dust with a light duster, or by lightly wiping them with a clean chamois skin, but in no case are they to be rubbed or polished.

## A. BRUNEL, <br> Commissioner.

## To. <br> Deputy Inspector of Weights and Measures.

Note.-All circulars are to be carefully preserved for future reference.

Circular No. 121.
$W . \&$.

## Department of Inland Revenoe, <br> Otpawa, August 18th, 1876

The law to be onforced.

Sir,--As all parties subject to the operation of the Act 36 Vic., cap. 47, respecting Weights and Measures, have now had ample timo to understand its provisions, and, as you have for some time been in a position to carry on the duties of inspectim, I am directed by the Hon. the Acting Minister of Inland Revenue, to inform you that, in all cases where parties who have boen notified by you in accordance with the terms of Circular No. 11丷, fail to submit their Weights, Measures or Weighing Machines for inspection, you are, after reasonable delay, to proceed to their premises and seize, under the 27th section of the said Act, ail such unstamped Weights, Measures or Weighing Machines, as may be there found in use. You will at the same time inform them in writing that the Government reserves for consideration the expediency of taking legal proceedings against them in accor lance with the provisions of the law.

> I remain, Sir,
> Your obedientservalt,
> A. BRUNEL,
> Commissioner.

To the Deputy Inspector of
Weights and Measures.

Circular No. 123.
$W . \& M$.

Department of Intand Revenue, Ottawa, Aug. 24th, 1876.

Sir,-Until 1880 the Old Winchester Bushel and Wine Gallon with Instructions their sub-multiples will be tolerated, but only where a specitic con- as to reriftract is made between buyer and seller (see 36 Vic., cap. 47 , sec. 5 , ${ }^{\text {cation }}$ of s.s. 2). Where you are satisfied that such a specific contract is made, Winchester and that the parties thereto are desirous to submit the measures to measurea be used in determining quantities under such agreement for verification, you may verify them by the following rules:-
lst. The Winchester Bushel will be equivalent to seven standard gallons:

> + One Standard $\frac{1}{2}$ gallon
> + One Standard quart
> + One-eighth of a gill
and so on in proportion to any of its sub-multiples.
2nd. Six Wine gallons will be equivalent to five Standard gallons, and so of the sub-multiples.

In this verification, the $\frac{1}{8}$ of a gill can be determined with sufficient accuracy by estimate, using the $\frac{1}{2}$ gill Standard measure for that parpose.

When the measures to be verified will hold water, water is to be used for the verification; others may be verified by using such description of small seed as can be conveniently obtained. Flax seed will be best.

It is not the intention of the Department to carry out the general verification of the old Winchester measures or the Wine measures, and they are only to be verified with reference to special contracts as above mentioned.

Traders who use such measures otherwise than in pursuance of a specific agreement, or who use them unstamped, will be amenable to penalties mentioned in the Act.

## A. BRUNEL. <br> Commissioner.

To the Deputy Inspector of
Weights and Measures.

Circular No. 125.
W. \& M.

Department of Inland Revenue, 1876.
Otrawa,
Sir,-Herewith you will receive a tin case with lock and key, in Care of
which you will keep the weights and measures stamps with which stamps. you are from time to time supplied. You will find in the box a set of envelopes duly labelled, in which you will place the respective denominations of stamps. There is also room in the case for the label account-book and for such cash as may remain in your hands at the close of the day.

It will be your duty to deposit this box in a secure place, taking it to your house, if necessary, each evening when closing your office.

> I remain,
> Your obedient servant,
A. BRENEL,

Commissioner.

Circular No. 127.
$W . \& M$.

> Department of Inland Retenue, Ottawa,
1876.

Instructions as to water supply.

Inatruetions for nge of "portable kit."

Sir,-With reference to paragraph No. 4, of Circular No. 101, in relation to the equipment of your office, I have now to instruct you that it is not necessary to incur any considerable expense in fitting up a water tank. A common barrel, holding from 30 to 40 gallons, provided it is clean, will be quite sufficient. 'I his may be set on end and the upper end removed or not, as you consider most convenient. A tap for drawing the water into the measures will be all that is necessary. As the water can be used many times over no pump will be required. Any waste water that may result from your operations can be caught in an ordinary patent pail and returned to he barrel or cistern.

> I remain, Your obedient servant, $$
\text { A. BRUNEL, }
$$ Commissioner.

To the Deputy Inspector of
Weights and Measures.

Circular No. 128.
$W . \& M$.

> Department of Inland Revenue, Ottawa, 15th September, 1876.

Description of the Deputy Inspector's Portable Kit.
The Portable Kit is supplied for facilitating the inspection of Weights and Measures during the annual tour of the Deputy Inspector. It is also to be used when visiting any place for the purpose of aseertaining whether light weights, short measures, or illegal weighing machines are used.

It weighs about 26 lbs. , and contains all that is necessary for local inspection of Legal Weights and Measures. Its use, however, requires both care and intelligence, and Inspectors will not be
empetent to use it until they fully understand the following description and instructions, which will be sufficiently clear to those who carefully study them, and at the same time, examine the parts of the Kit referred to.

Before unstrapping the cover of the Kit, or before attempting to Caution as to open it, place it firmly with its bottom side-i. e., the side to which unpackingo the buckles and brass rings are attached -on a strong level table or counter. Stress is laid on this direction, because if opened wrong side up, the nest of weights may be scattered about, and the smaller ones may be lost. Be very careful, also, not to move the Kit without first closing the case and buckling the straps.

When opened, the Kit will be found to contain :

1. Apparatus for weighing up to 50 lbs., consisting of :-

## List of contents.

(a) Balance-beam, made to bo used either as an equal or unequal balance.
(b) Two small pany for the equal balance.
(c) Platform or large steel pan to be used on the short end of the unequal balance.
(d) Four links or hooks, with V bearings. The largest one for suspending the beam to the bracket; the next in size for suspending the large steel pan or platform to the beam, and the two smaller ones for suspending the small pans to the ends of the beam.
(e) An iron bracket or frame upon which the beam is to hang.
(f) A nest of weights, viz.:

2 of 2 lbs . each.
1 each of $1 \mathrm{lb}, .8 \mathrm{oz} ., 4 \mathrm{oz} ., 2 \mathrm{oz} ., 1 \mathrm{oz} ., 8$ drachms, 4 drachms, 2 drachms, 1 drachm, and 2 of $\frac{1}{2}$ drachm each.
(g) A box containing a small balance, with its pans, standard, and a set of grain weights, consisting of:

$$
\begin{aligned}
& 6 \mathrm{gr},, 3 \mathrm{gr}, 2^{2} \mathrm{gr} ., 1 \mathrm{gr} . \\
& \cdot 6 \mathrm{gr} ., 3 \mathrm{gr} ., 2 \mathrm{gr} .,-1 \mathrm{gr} .
\end{aligned}
$$

2. A folded standurd yarrl, sub-divided into feet and inches.
3. A guage-rod for testing leyal measures of capacity.

Before moving any of the picces, carefully obscrve how each To observe of the pieces is disposed in the case, so as to be able to restore them how packed. to the same position after using them.

An examination of the Kit will show that the balance-beam has four knife-edges of fulcrums:-

A central one which fits into the large link and serves to suspend it from the bracket.
One at each end, from which the small brass pans are suspended when used as a balance, with equal arms.
One at a distance from the centre, equal to one-tenth of the distance between the centre and the end fulcrums.

The links are placed on these knife-edges or fulcrums as pre viously described. They must be examined, so as to ascertain their proper positions, and carefully handled so as to aroid injury to the bearings.

How to set it up.

When settiny up the baldance for use:
First set up the bracket by placing its end in the socket attached to the bottom of the case, and secure it there by inserting in the hole provided for that purpose the small pin attached by a chain, to the bottom of the case.
Then take the large link and hook it into the eye at the top of the bracket.
Next take the balance-beam and place its centre knife-edge in the last mentioned link, the fulcrum of the short arm to the right.
If it in to be used as an equal balance-beam, place one of the small hooks on the knife-edges at each end of the beam, and hook one of the brass pans to each of them. Observe that the anyular ends of these hooks go on the knife-edges. It is then ready for use, and, if properly set up, will, with tive pounds in each pan, turn decidedly with two grains, and as the toleration of error in commercial weights, from excess to deficiency, is eight grains for five pounds, the balance will weigh with sufficient accuracy.

Oaution. Nore.-When using this beam, always keep the box containing the small balance in its place, so that it may serve as a rest for the right hand pan.

If the beam is to be used as an unequal balance, remove the pan and hook from the right hand end of the beam.
Place the second size hook on the knife-edge next the centre.
Hook on the steel pan or platform. The balance should then be in equilibrium, but to determine whether it is so or not, steady it with the hand in a level position, and observe whether it has a decided tendency to turn one way or the other. If there is a decided tendency one way or the other, it must be counteracted ly the addition of counterpoise weights in the light side till it exactly balances.
How to tests Totest a twenty-pound weight, place it in the large pan, and place arge weights, a two-pound standard in the small one. If the weight is exact, ten grains on the large pan will turn the beam, and as the toleration of error for commercial weights from excess to deficiency is 28 grains for twenty pounds, the weight can be tested within that remedy.

Precautions.
The testing of weights by the unequal arm demands great care. The weight must be placed exactly in the centre of the large pan. This should be done by actual measurement. The pan must be steadied by the hand, so as to place the tongue of the beam upright, and the tendency in cither direction must be carefully observed, as well as the number of grains necessary to counteract the tendency. Observe, also, that the number of grains placed in the large pan with the weight, to be veritied, count at their nominal value, while the number placed in the small pan must be multiplied by ten. Thus: If ten grains are required in the large pan to produce an
equilibrium, the weight is ten grains light; but if it is found necossary to place five grains in the small pan, then the weight in the large pan is fitty grains too heavy.

Although the balance is made to weigh up to fifty pounds, and will do so with sufficient accuracy, if proper care is used, it will not be necessary, nor is it desirable, to use it for the verification of greater weights than 20 lbs . When in equilibrium, with 30 lbs . in

Not to be used for more than 20 lbs ., except in emergency. the large pan, the beam will turn very decidedly by the addition of ten grains in the large, or one tenth of a grain in the small pan, in 'aves of emergency, therefore, $30 \cdot \mathrm{lb}$. weights may be verified in the balance, but great care is necessary in doing so.

For the verification of fifty and thirty-pound weights, or the 56 and 281b. weights tolerated till 1880 , it will be desirable to use the truder's balance, provided he has one that can be admitted to verification under the regulations. If he has no such balance, it will not be necessary to verify his heavy weights, as he could not legally use them. But if he has a suitable balance, after testing his weights of the lower den minations, such of them as are admitted to verification may be used with the verified balances for testing his weights of the higher denominations.

In testing the tolerated weights, that of 7 lbs may be tested with Testing smal the equal arms, but the lulb. weight must be tested with the ler weights. unequal arms, and the counterpoise for it will be 1 lb .6 oz .6 drachms and 11 grains.

The Kit also contains a brass guage-rod for testing Dominion measures of capacity.

On reference to the Order in Council of the 1st September, it will be observed that all Dominion measures of capacity are required to be truly cylindrical, and such measures may be tested with sufficient accuracy for ordintry trade transactions by this galuge-rod. but when extreme accuracy is required, the standard measures must be lsed.

Instructions as to the use of the guage-rod are engraved on its Use of gauge edgos. They are extremely simple, and can hardly be misunder- rod. stood.
(a) On the side marked "diameter," measure the diameter of the ressel. This measurement should be taken at right angles, and if there is any difference, the mean of the two is to be used.
(b) On the side marked "depths," measure the depth of the vessel. This in large vessels should be done in several places, laying a straight edge across the rim for taking the depth near the centre. If there is any difference in the depths so taken, the mean is to be used.

If the mearmes are made in the proportion as to depth and diameter given in the Schedule of Dimensions issued by the Department, they will exactly correspond with the divisions in the rod. The dimensions may, however, be varied without affiecting the accuracy of the result arrived at by the gauge-rod, and when they donot exactly correspond with the division lines on the rod the fractions of the division may be entimated with sufficient accuracy.

If the measures are correct, the depth added to the diameter, shown by the gauge-rod, will be :-
For a $\frac{1}{2}$ gill ..... 10
gill ..... 20
" $\frac{1}{2}$ pint. ..... 30
pint. ..... 40
" quart ..... 50
" $\frac{1}{2}$ gallon. ..... 60
" gallon. ..... 70
" peck. ..... 80
" $\frac{1}{2}$ bushel ..... 90
" bushel. ..... 100

The other instrument contained in the Kit is the standard yard of brass. This is subdivided into feet, inches and tenths of an inch. Its use does not require any special instructions.

A. BRUNEL,<br>Commissioner.

Gircular No. 129.
$W . \& M$.

> Department of Inland Revenue, Ottawa, September , 1876.

## Arrangements as to

 beating officesSir,-In order to assist the Department to form an approximate estimate of the cost of heating your office, you will be good enough to reply to the following questions, viz:-

1. What is the cost per ton of stove coal and of firewood per cord delivered at your office?
2. How many tons of coal or cords of hand wood do you think you will require to heat your office during the coming winter?
3. Of wood or coal, which, under all circumstances, do you consider the most economical?
4. At what price can you purchase a stove suitable for your office, and what will be the cost of the stovepipes necessary for putting it up?

I am,
Your obedient servant,

## A. BRUNEL,

Commisaioner.
$W . \& M$.

> Department of Inland Revenue, Ottawa, Sept. 20th, 1676.

Sir,-You will in future govern yourself by the following instruc- Instructions tions in carrying on your official correspondence :
as to correse pondence.

1. Official letters are to be written on foolscap paper, leaving a consenient margin-i. e. from half to one-fourth-on the inside of the paper.
2. When the letter does not extend beyond one page. only half of a sheet is to be used. If the latter cannot be written on one page leaving a quarter margin, a second half sheet is to be used.
3. For convenience in using the press copying book, eut shoets will in future be issued, which are to be written on only on one side. Officers who may have a stock of full sheets on hand will cut them.
4. Each letter is to relate to one subject only, and must contain as full and complete information on that subject as possible.
5. Each paragraph is to be numbered as shown in this circular.
6. If there are any inclosures they must be described in the margin or designated by letter thus: * The transmission of unnecessary inclosures is to be avoided.
7. All official letters are to be folded in four folds, as this circular is, and forwarded in official envelopes, "E. 2."
8. Official envelopes are supplied to all officers, and they are to be used as follows:
E. 1. For Inland Revenue papers and returns: white cap and large cap.
E. 1. Canal let passes and ship's reports only; square brown.
E. 2. Commissioner I. R. correspondence ; white cap.
e. 2. do do do white note.
e. 3. For deposits and advice notes; Excise, buff note.
e. 3. do do do Canals, amber noto.
e. 3. do do do Cullers', pink note.
e. 3. do do do Slides, canary note.
e. 3. do do do Inspection; W.\&. M., Gas, \&c., blue note.
E. 4. Collector of Inland Revenue; white cap.
E. 5. For Staples Inspection returns only; buff cap.
E. 6. For official returns: W. \& M., Gas, dc., blue cap.
e. 6. For requisitions and receipts; W. \& M., (ras, \&c., blue note.

For forms D. 16 and D. 161 2 , extra large sizes are supplied.
9. Reports on official references are to be written on the folds of the official backing when there is room. It will be observed that these fulds are numbered $1,2,3,4$. The report is to commence on
the first vacant space and continued on each fold in regular sequence. The inside of the backing, which will be considered as No. 5, may be written on if necessary.
10. When there is not sufficient space on the backing a separate half sheet of foolscap is to be used, anl in such case no part of the report will be written on the backing; but generally, if the report is concisely written and all useless or formal verbiage avoided, there will be ample room.
11. In official correspondence and in reports, the most concise and explicit terms are to be used; formal and unnecessary quotations from previous letters, repetitions and mere speculative opinions unsupported by evidence are to bo avoided, and in making statements the exact facts are to be rigidly adhered to, as the writer will be held strictly accountable for the accuracy of the information he forwards.
12. Copying presses and books are only supplied to the principa offices. When they are not supplied, the otfices must keep manuscript copies of their correspondence.
13. Requisitions for stationery, forms ard supplies of any kind, are to be made on the printed forms issued for that pupose, and are not to be included in letters, exce, t when referred to as inclosures.

I am,
$\quad$ Your obedient servant, A. BRUNEL,

Commissioner.
To.
Circular No. 132.

$$
W \cdot \& M .
$$

> Department of Inland Revenie, Ottawa, Octuber 3rd, 1876.

As to Inspection of Weighbridges, dc.

## Instruction :

as to inspection of platform scales and weigh bridges

If the In pecting Officer has not in possession a sufficient number of 50 ib standard weights to make the full load, the following method may be resorted to:-
list. Place on the scale the whole of the avaibable stamburds, and note indicution.

2nd. Remove standards without disturbing counterpoise or weights on graduated arm.

Brd. Replace the standards by any other heavy material, such as pig ison of old motal, until the scale is again in equilibrium. The exact equilibrium may be produced bv the use of some shot in a tin cup.
th. Add the standards to the previous load, and again note the indication.

5th. Remove the standards, and proceed as in Sec. 3.
Repeat the process as often as necessary to complete the full load

A. BRUNEL,<br>Commissioner:

Circular No. 133.
$W . \& M$.

Department of Inland Revenue,<br>Ottawa, Octoler 6th, 1876.

Sir,-Until further notice you are not to enforce the inspection Not toinspect of ordinary tape lines, foot rulos, iron squares, or other similar mea- tape lines, sures commonly used by mechanics in the ordinary pursuit of their $\& c$. business.

> I am, Sir,
> $\quad$ Your obedient servant, A. BRUNEL,

Commissioner.
The Deputy Inspector
of Weights and Measures.

Circular No. 134.
$W$. d $M$.

> Department of Inland Revenue, Otrawa, 31 st October, 1876.

Art. 1.-Instructions for Verification of Balances with Equal Arms.
General instructions as to mode of The Officer will first make himself thoroughly acquainted with $\begin{gathered}\text { as to motication } \\ \text { ver }\end{gathered}$ the following Section of the Order in Council of 26 th July, 1875:
A. Balances with equal arms are only to be admitted to verifi- Balances cation when:

1. The beam shows no perceptible difference ts regards the form Council. of the two arms.
2. It is provided with a tongue pointing upwads or downwardfrom it centre, at right angles with a line joining the extreme bearings.
3. It is in equilimium when a line joining the extreme bearings is perfectly horizontal, and returns to that position after being put into vibration.
4. Its arms are e pual within the specified limit of error.
5. The balance is sufficiently sensitive to be turned decidedly and promptly by the audition or withdrawal of so much of the load as represents the error tolerated by regulations.
6. No balance balls or other detached parts othor than the pans are used for adjusting the balance.
7. The balance, as a whole, is of sufficient strength, and on a sufficiently stable base to secure it against change of form or position under the maximum load it is to carry.
8. The beam will carry its maximum load without deflection.
9. The maximum load for which it is to be used, is distinetly engraved or marked on the beam.
10. The knife edges are permanently fixed to the beam.

Then procoed to determine whether the balance submitted to verification complies with the above conditions.

1. As to $\$ S 1,2,6,7,8,9,10$, by a careful examination.

With reference to the conformity of the balance with the require-
ments of $\$ 5,7,8,10$, the Inspector must necessarily rely upon his

Trehnical instructions technical knowledge.
2. As to $\$ 3$ :
(a) Observe whether the beam, with the pans suspended to it is in equilibrium without any load
(b) Place a load in each pan equal to abont half the load which the balance is designated to carry, and carefully aduast the loals, so that the beam is in perfect equilibriam.
(c) Determine by means of a plummet and string whether the pointer or tongue is vertical.
(d) Make the balance vibrate through a considerable arc, say about 20 degrees, and observe whether it recovers itself readily, and then determine by means of the plummet as before, whether it returns to the same position whe in equilibrium.

If these tests are satisfactory, it may then be tested-
3. As to its conformity with $S 4$, as follows
(a) Change the loads from one pan to the other; observe whether the beam remains in equilibrium with the loads thus transposed.
(b) Cause the beam to vibrate, and observe whether it returns to the same position of equilibrium as before. If it does, it complies with this.s. If it does not return to equilibrium:-
(c) Determine by use of the grain weights how much it requires in either pan to restore equilibrium.
(d) Make a similar test with the full load the beam is marked to carry.

If the weight added to the load in either pan, in order to restore equilibrium, is more than उठoण of the load, the beam must be rejected.

If the balance is not rejected under the preceding test, it must then be tested-
4. With reference to its conformity with the requirements of $\S$ 5, as foilows:
(a) Place a load in each pan equal to the full weight which the beam is marked to carry, and adjust the loads so that the beam is in equilibrium.
(b) Place, with the load in the left hand pan, the weights equal to the remedy of error allowed for weights equal to the load then in the pan, as per "Schedule of Remedy," and observe whether the balance turns quickly and decidedly.
(c) Remove the "Remedy Weights" from the left to the right hand pan, and observe whether thero is a quick and decided corresponding turn of the beam.
If the beam fails to turn decidedly under these conditions in either direction, it must be rejected.

> Art. II.---Instructions for the Verification of Steelyards.

The Inspecting Officer must first make himself fully acquainted with the following Section of the Order in Council of the 26th July :

Steelyards; extract from Order in Council.

B. Balances commonly known as steelyards or Roman balances having unequal arms, are only to be admitted to verification when-

1. There is sufficient room for oscillation, and the knife edges on which the beam oscillates, are sufficiently fine to permit fit to move treely.
2. The beam is sufficiently strong to carry its load without deflection.
3. The bottom of the notches by which the divisions of the long arm of the lever are indicated, and from which the woight is suspended, are in a right line drawn through the knife edges forming the points of suspension, and when such straight line passes near to and a little above the centre of gravity of the whole apparatus.
4. The divisions on the long arm of the lever are equal among themselves.
5. The weights used with the lever aredeither some multiple or sub-multiple of the pound avoirdupois, and have distinctly marked on them their true weight, or are so attached to the beam that no other weights can be substituted.
6. The maximum weight intended to be weighed on it is distinctly marked on the beam or indicated by its construction.
7. The position of equilibrium is indicated by a tongue or pointer exactly vertical when the line defined in $\S 3$ is horizontal.

The graduated arm of the common Steelyard usually consists of a Description. square bar, with notches in the upper and lower angles to define the divisions. The beam has usually two points of suspension, and two tongues or pointers for indicating its equilibrium pointing in ${ }^{0}$ pposite directions.

One of the angles of the graduated arm is divided so as to weigh the lower denomination of weights; the other, for the higher denomination. The divisions as also the pointer in use will, of course, always be on the upper angle or side.

This instrument may be made to indicate weights with sufficient accuracy, but generally it is very roughly made, and as a necessary consequence it is very unreliable. There should, therefore, be no hesitation in rejecting it when its indications are not within the tolerated remedy.

Steelyards are, however, in use which have been made in a very superior manner, and a careful and experienced weigher can obtain With them results which approximate very closely to the truth.

It is mainly with reference to these last-mentioned weighing machines that the following regulations as to the verifications of "Balances with unequal arms" have been prepared:-

Teehnical instructions.

1. The Inspecting Officer must satisfy himself, by careful examination, that the requirements of section $B$ above quoted are complied with. This as to $\$ \Omega 1,5,6,7$ mav be done by examinations only; but with reference to the other paragraphs the following tests must be applied.
2. The strength of the beam will be tested as follows:
(a) Suspend from the short arm of the lever the heaviest load which the beam is made to carry, and place the counterpoise at the division line representing such load.
(b) Stretch a fine thread along the side of the lever when unloaded and again when loaded, and observe if the beam has changed its form.
For this test of beams made to carry one or more tons, the short arm of the lever may be fastened to some fixed object beneath it as a beam in the floor or other suitable object of sufficient stability, and the counterpise may then be moved to the extreme end of the long arm of the lever.
3. The beam may be tested with reference to $\leqslant 3$ of the regulations as follows:
(a) Stretch a fine thread along the beam, so as to coincide as nearly as possible with the bottom of the notches or other bearing points to which the counterpoise is suspended, and extend it beyond the edge of the knife-edge on the short arm of the lever. Then note how nearly the thread coincides with the main point of suspension and the knife-edge that carries the load.
4. With reforence to $\$ 4$ of the Regulations proceed as follows:
(a) Compare the principal divisions with each other, so as to determine whether they are equal among themselves. This may be most conveniently done by means of a pair of steel bow-dividers with very fine points, taking care to place the points opposite to, but not in the bottom line of the divisions. The sub-divisions may be compared in the same way with the points of the dividers, so far open as to embrace several divisions.
5. When the counterpoise, with its supports are so attached to the long arm of the beam that it cannot be removed without breaking or cutting some part of the metal, the beam may be tested as follows, after the previous tests have been completed:
(a) Suspend any weight from the short end of the lever that may be available, and as near to the full load that the beam is to carry as possible; place the beam in equilibrium by means of the counterpoise, and observe whether it oscillates freely, and whether, after putting it in oscillation, it returns to a horizontal position.
(b) Remove the load, and if the beam is not provided with a scale pan to which it is properly adjusted, some suitable means must be provided for connecting the standards with the short arm of the beam--for small beams, an ordinary scale pan will do-but whatever is used, it should be exactly balanced by a small weight used as ab counterpoise on the extreme end of the long arm of the beam, or if this can not be conveniently done, the scale pan or other appliance may be so adjusted as to weigh
the exact weight indicated by one or more integral divisions on the beam. In the latter case, allowance for the weight of the scale pan, \&c., must be made in every comparison.
(c) Place standards in the pan and test the accuracy of the beam by noticing whether it weighs them accurately.
6. If the beam is made to weigh a greater weight than there are standards to represent or than cail be conveniently attached to it, the test may be made as far as possible in the manner above directed, and continued in the following manner:
(a) Load it with a 50 lb . standard, and note if it weighs it correctly.
(b) Add another 50 lb . standard to the load and again note whether the additional load is truly indicated.
(c) Measure with the dividers, as above directed, the distance between the two divisions indicating the 50 lb . and 100 lb., and compare this distance with the divisions indicating additional fifties along the whole length of the arm.
If the distances for each additional 50 lb . of load are equal among themselves, the beam may be assumed to be correct.
7. When the counterpoises can be readily removed from the beam, or when more than one counterpoise is used with it.

In this case the maximum weight the beam is made to carry must be legibly inscribed on it and :---

The actual weight in avoirdupois pounds or authorized submultiple thereof of each counterpoise, must be marked on it in the same manner as is required with reference to weights used with platform scales.
When the beam conforms to the regulations in the above mentioned particulars, the verification of it may be proceeded with as follows:--
(a) Verify the weights marked on the movable counterpoise.
(b) Verify the weights of the additional counterpoises and see that they are multiples of each other, and that theirweights are properly marked on them.
(c) Place the counterpoise at zero on the graduated arm of the beam which should then be in equilibrium. If the zero mark does not come within the range of the graduations, place the counterpoise on a division mark that indicates a pound, or some multiple of the pound, represented by the standard as $1 \mathrm{lb} ., 2 \mathrm{lb}$., 31b., \&c., then by suspending a corresponding standard to the short arm of the lever, the beam should be in equilibrium.
(d) Add to the load such additional standards as may be convenient, as 20,30 or 50 lb ., and note whether the beam weighs the standards correctly.
When in addition to the counterpoise movable on the beam, there are other counterpoises, each representing a definite weight when attached to the extreme end of the graduated arm of the beam--
(e) Place on the short arm of the beam a load of standards (or a load of which the exact weight is known) equal to the weight represented by the smallest of the additional counterpoises, and note whether the beam is then in equilibrium.
( $f$ ) Note whether the larger counterpoises are exact multiples of the smaller ones, and whether they are marked as weighing exact multiples of the load weighed by it.
If it is found that by the above tests the beam weighs correctly, and is in all respects in accordance with the regulations prescribed under the law, it may be stamped and an indenture may be issued.

It is, however, to be understood that the above expedients for estimating the approximate correctness of beams of this description, are not intended to relieve the Deputy Inspector of the duty of testing such beams with loads of standards equal to their full capacity, when sufficient standards are available, and it is possible to use them without incurring an unreasonable cost in moving them. And the inspecting officer will bear in mind that tests made in the manner above described, can only be equivalent to tests made with full loads of standards, when the utmost care and accuracy are observed in making such tests.

As a rule when making tests with the beams loaded to less than their full capacity, not less than ${ }_{10}^{10}$ (one-tenth) of the load should be used.

Art. III.--Instructions for the Verification of Weigh-Bridges, Hay Scales and Platform Scales.

The Inspecting Officer must first make himself master of the following sections of the Order in Council of the 26th July, 1875:

Extract from Order in Council.
C. Weigh-bridges, Hay Scales and Platform Scales, will only bo admitted to verification when :

1. The foundation and supporting base is sufficiently firm and capable of carrying without change of level or of form, or other disturbance, the maximum load for which it is to be used:-
2. If movable from place to place, some satisfactory arrangement, such as a level or plummet is provided and permanently attached, for indicating whether the machine is perfectly level :---
3. The platform is so arranged that any obstruction to its free movement can be easily detected :---
4. All the beams, levers, and other parts are of sufficient strength to carry the naximum load to which they will be respectively subjected without deflection:--
5. The knife edges are firmly and permanently fixed in the levers, have sufficient room to permit froe oscillation, and are sufficiently firm:-

## 6. The oscillations are sufficiently evident:-

7. The weights used with the instrument are equal to the pound or authorized multiples or sub-multiples of the pound, plainly marked with their actual weight, and with the weight they aro intended to indicate on the scale:-
8. The weights used as above are a decimal sub-multiple as $\frac{1}{1}^{1} 0$, $\Gamma_{0}^{1} \overline{0}, \overline{10}_{100}^{1}$, of the load indicated by them:-
9. There are no movable balls or detached parts for the adjustment of the balance accessible or so placed that they can be changed without breaking a seal, or without the change coming to the knowledge of the Deputy Inspector*:-
10. The apparatus indicates the same weight, whether the load is placed in the centre of the platform, on one side of it, or at either corner:-
11. The maximum load which the apparatus is intended to weigh is conspicuously marked on some essential part of it:-
I. The Inspector will observe that there are several varieties of lnstructions portable weigh-bridges and platform scales in use, which under the as to objecregulations above cited, cannot be admitted to verification. The paratns. following may be mentioned as examples:
(a) The scale known as the " Improved Union," (see cut). This scalo is made to weigh on two platforms which give indications in relation to each other in the proportion of one to eight. In addition to the platform, a "scoop" is provided, which may be placed on the smaller platform. A weight is provided which is to be used as an additional counterpoise, as an equivalent to


Union scale.

Improved Union or Family Scale. the weight of the "scoop."

This additional counterpoise is of the nature of a " movable or detached part for the adjustment of the balance.." The scale will, therefore, be rejected under $\S 9$ of the section of the Order in Conncil above cited.

This description of scale is not to be considered as liable to rejection for the reason that the weights used with it are not in a decimal

Exceptions to general rule. ratio to the load indicated on both platforms, if they are equal to a pound or an authorized multiple or sub-multiple of a pound, and are in a decimal ratio to the load weighed by them on the principal platform. Scales of this description, made in the proportion of one to eight, or in any other than a decimal ratio, as to the load on both platforms, that may be submitted for verification by manufacturers of scales or by parties who keep thom for sale, will be rejected under $\S \S 7$ and 8 of the section of the Order in Council above cited. But when submitted by parties who have had them in use previous to the issue of these instructions, they may be verified if, in all other particulars, they conform to the regulations.

[^16]Grocers' scale
(b) The scale known as the "Grocers' Scale" (see cut), when constructed with a "Scoop" in addition to the attached weighing platform, and requiring an addition to the counterpoise, or, as is sometime arranged, with a "tare-beam," as in cut No. 2, is liable to the same objections as are stated in (a), and will be rejected under $\S 9$ of the section of the Order in Council above cited.


Vo. 2 Grocers' Scale, with Double Beam.
Butter scales. (c) The scale described as the "Butter Trip Scale," with equal armed beam and a balance beam and ball at the side (see cut), is also liable to rejection. The balance beam at the side carries what is in effect a " movable ball or detached part." It will, therefore, be rejected
 under $\$ 9$ of the section of the Order in Butter Trip Scales Council above cited.

Trip scale.
(d) The scale described as the "Grocers' Trip Scale," with equal armed beam (see cut), and having in addition to the artached weighing pans with which the scale is in equilibrium, a scoop, with a separate counterpoise to be used with the scoop, is also to be rejected under the paragraph
 above cited.
General rule. And generally-
When a scoop for holding goods is used with any scale or balance, it must be an integral part thereof; that is, it must be necessary for putting the unloaded scale in equilibrium, and there must be no mode of using the scale without it.
(e) The Dairy Scale (sec cut) has a double beam, the lower one carrying a weight whereby the tare of the milk cans or other vessels is taken This, however, is not to be rejected when:

(1) The words "Tare B3am" are distinctly incised on the beam used for that purpose.
(2) The words "Tare Weight" distinctly incised on the weight so used.
(3) The tare weight is provided with means of fixing it in its place, so that it cannot be easily moved.
There are so many kinds of platform scales that it would be difficult to give specific instructions as to each, but the above will serve as a general guide. When any variety not clearly covered by these instructions is presented, and as to which the Inspector has doubts, he is to apply to the Department for instructions, sending with his application such a description of the scale as will enable the Department to arrive at a proper decision.
2. When verifying a Portable Platform Scale or Weigh Bridge, the Inspector must:
(a) See that the maximum weight which the scale is to weigh is plainly inscribed on it in letters and figures of a size iectruction proportioned to the scale, and that the weights to be used with it are in conformity with $\$ 7$ of the section of the Order in Council above quoted.
If they are -
(b) Verify them by the standards as directed in sections 1,2 , 3, 4, Art. IV, with refereace to other weights.
(c) The weights being verified, they are to be stamped on the places prepared for that purpose.
( $($ l) The counterpoise and movable weight attached to the graduated arm are not to be stamped until the whole process of verification is complete.
WES Great care must be excrcised in the verification of weights Caution. used with platform scales and weigh bridges. The importance of this will bo seen when it is considered that whatever error there may be in the weight, it is exaggerated in the load weighed in the proportion which the load bears to the weight. Thus, if the weight indicates a multiple of 100 , an error of .01 in the weight will cause an error of 1 . in the load.

If the weights are approved, the owner must next cause the scale to be taken apart sufficiently to permit the Inspector to examine all its working parts, and the Inspector will:
(a) Carefully examine all the beams and supports so as to ascertain whether they are of sufficient strength; whether the knife-edges for each series of levers are in the same horizontal plane, and are substantially and firmly fixed; whether there is ample room in the carrying links or other supports of the knife-edges for their oscillation; whether all the bearing surfaces are intact, and in good order, and generally, whether the apparatus is sufficiently woll made to work freely. The owner will then put it together and-
(b) The Inspector will see that it is placed on a level platform, and that it is provided with the necessary means for determining whether it is level.
(c) Ascertain whether with the counterpoise on the end of the graduated arm, and with the movable weight at zero, the scale is in perfect equilibrium, that is :
(1) The tongue on the graduated arm must be vertical, or, in the absence of the tongue, the beam must be horizoutal.
(2) The graduated arm must vibrate freely, and when disturbed it must return to its normal or horizontal position.
(d) Place on the platform a standard weight equal to the minimum load which it is intended to weigh, and note:
(1) Whether the weight of such load is correctly indicated.
(2) Whether the scale is in conformity with the requirements of the Schedule of Remedy or allowance for errors.
(e) Add to the load on the platform additional standards until its maximum load is placed on it, noting the result at several (from three to five) stages of the additions as described in (d).
( $f$ ) Remove the load and test the results "backwards," noting whether the results are the same as in the previous testing, as a check.
(g) Place as much as possible of the full load on each corner of the platform in succession, and observe whether the scale still indicates the weight on it correctly, within the limits of error tolerated, make the same tests with a reduced load.
( $h$ ) Place the load (as in $g$ ) on the ends or sides of the platform nearest to the graduated beam or pan which carries the weight, and observe results. Then change the load to the opposite end or side of the pan, and note whether the results indicated are the same in both cases.
(i) The same process of testing will be followed when the platforms are carried on levers or beams, or a combination of them equivalent to a balance with equal arms.

When not in possession of safficient weight of standards.
3. If the Inspecting Officer has not in possession a sufficient weight of standards to make the full load of the scale inspected, the following method of testing may be resorted to:-
(a) Proceed as directed in $\S \S 1$ and 2 of Art. III, as far as the weight of standards available will permit.
(b) Remove the standards from the platform, and without disturbing the counterpoise or weights on the graduated arm, replace the standards by any other suitable weights, or load until the scale is again in exact equilibrium.
(c) Again add the standards to the load, and observe results as before.
This procoss will be repeated until the maximum load is reached. For scales or weigh bridges to weigh from one to two thousand pounds, pig iron will be the best material wherewith to replace the standards, but any heavy material may be used, as masses of stone or small boulders.

When the whole process of verifying the scales has been so far completed-
(a) Examine the counterpoise and see that the aperture, if any, left for the introduction or withdrawal of shot or
other material for adjusting its weight has been effectually closed and sealed by a plug of soft metal. If this has been properly done, impress the stamp upon it.
(b) Examine the movable weight carried on the graduated arm, and deal with it in the same manner as with the counterpoise.

## Finally :-

If the scale has the maker's consecutive number incised on As to any essential part of it, that number is to be used for stamping. identification in the Indenture, and no stamp will be necessary. If it has no such number, some essential part of it-as the graduated arm-must be stamped. In stamping, great care must be taken to avoid bending or in any way changing the form of the arm.
4. The inspection of hay scales, grain scales, and large weigh bridges, such as are used by railway companies, and which are attached to fixed foundations, will be governed by instruction given in §3, in so far as they are applicable. The following additional instructions must also be followed:
(a) The foundation must be carefully examined as to its Inspection of strength and general fitness to carry the proposed load large scalos and the possibility of its settling out of level. in position.
(b) Ascertain whother the fuundation is truly level.
5. The counterpoioe or weight permanently attached to the end of the graduated arm, and movable or sliding weight carried on that arm for the indication of fractional parts of the load, must, when they can be separated from the arm without breaking or cutting any of the links, rings or collars by which they are carried, have their exact weight marked or engraved on them, that is :
(a) On the counterpoise, its weight, when it places the balance in equilibrium.
(b) On the sliding or movable weight, its exact weight, when duly adjusted.
6. If there are any apertures in the counterpoise or in the movable weight by which shot or other matter can be removed or introduced, such apertures must be closed by a soft metal plug, upon which the verification stamp is to be impressed after they have been verified.
7. With reference to the soft metal plug for receiving the stamp, it will be sufficient if the stamping of iron weights is provided for by remoring the hard skin of the iron from a sufficient space, say $\frac{3}{4}$ of an inch in diameter, so that the stamp may be impressed on the softer metal below.
8. The verification fee for platform scales and weigh bridges Verification includes the scale, the counterpoise and the movable weight on the fee. graduated arm. All other weights belonging to such scales or weigh bridges are to be verified and separately charged for at the tariff prescribed for avoirdupois weights of the same denominations.
9. The actual weight in avoirdupois pounds, or parts of a pound, is to be legibly marked on all weights belonging to platform scales or weigh bridges, as well as the weight of the load they are to indicate. This may be done on weights belonging to scales and weigh bridges already in use, and not so marked by stencilling or
painting ; but whenerer the stencil or paint wears off, it must bo renewed. No weight belonging to platform scales or weigh bridges, made or sold, or offered for sale after the inspection has been fully inaugurated, are to be admitted to verification unless their actual weight and the weight they are to represent in the load are cast, or plainly incised on them

Reference to Order in Council.

Technical instructions.

Art. 1V.-Instructions for the Verification of Weights.

1. Examine the weights carefutly and see that they are in conformity with Schedule $\mathbf{A}$ of the Order in Council of 26 th of July, 1875.
2. If the weighing is to be performed with the official balance, proceed as follows:-
(a) Place the standard in the left hand jan.
(b) Place a counterpoise in the right hand pan, which may consist of any available weights, among which should be a small tin cup with a quantity of small shot in it. This shot may be added to, or deducted from, until the balance exactly indicates zero.
(c) Remove the standard from the left hand pan and in its place put the weight to be compared.
(d) If the balance does not remain at zero. add grain weights to one pan or the other until it does. If they are required in the left. hand pan with the compared woight, the number of grains added will show how much the weight is lighter than the standard, and will be designated by the sign-(or minus.) If, on the other hand, they are required in the right hand pan, the number of grains by which it is heavy, and will be designated by the sign + (or plus.)
3. By adopting the above method of verification, errors due to any difference there may be in the length of the arms of the balance will be avoided. Any balance, therefore, which is sufficiently sensitive, may be used.
4. Although the method above described is somewhat tedious, it should always be used when accuracy is aimed at, or whon there is any doubt as to the accuracy of the balance. But with grood balances, such as are supplied to its officers by the Department, ordinary commercial weights undergoing verification, may be compared by direct weighing against the standards.

## Art. V.-Instructions as to the Issue of Indentures and A fjixing Stamps thereto.

Indenture with each ar ticle when demanded.

1. An Indenture must be issued for each weigh bridge, platform scale or steelyard, such indenture to include the weights belonging to the scale to which it refers. It is usual for manufacturers of scales to designate them by a progressive number. When this is done, and when such number is engraved or impressed upon an essential part of the apparatus, no other stamp will be necessary, as the progressive number can then be inserted in the indenture and will be a sufficient identification.
2. A separate indenture will also be issued for any set of weights, measures or weighing machine when verified for manufacturers
or dealers, or when demanded by the owners; but, when verified for traders, who use the weights, \&c., after they are verified, a zumber of them may be included in the same indenture. Care must always be taken, however, that no more are grouped together than can be represented by stamps for which there is room on the space set apart for them.
3. It is not necessary (as some Deputy Inspectors have imagined) to apply a stamp for each article. But the total value of the stamps attached to the indentures must exactly represent the fees chargeable on the articles covered by the indenture. This being kept in view, the largest available stamps are to be used.
4. In all cases the state of weights, measures and weighing Entries in machines, when first presented for verification, is to be entered in books. the Registers, and the fees are then to be collected. If they do not pass for verification, the words " withdrawn for re-adjustment" are to be written opposite, and when the same weights, \&c., are again presented, if then found correct, the indenture may-until 30th June, 1875, be issued without additional charge, reference being made to the progressive number under which they were first submitted, by Writing such number across the columns which would otherwise bo occapied by the denomination of the stamps issued.
5. After the 30 th June, 1877 , the fees must be collected every Fees. time the articles are verified, whether they pass or not.

Note (a).-In all cases when placing weights in the pan of the Caution as to balance supplied by the Department, or removing them from it, the use of appabalance must be raised from its bearings. If the traders' balance is ratus. used as suggested in the instructions for using the portable kit, (Circular No. 128,) it must first be verified under Article I.

Note (b). With reference to the balance-ball on platform-scales Balance ball and weigh-bridges referred to in $\S 9$ of Section $\mathbf{C}$ of the Order in Council of 26 th July, 1875, as the expediency of modifying this not to be inregulation is under consideration, pending the issue of other regulations the balance-ball is not to be interfered with, nor is the plat-form-scale or weigh-bridge on which it is used to be rejected unless such balance-ball is of an unusual character.

A. BRUNEL,<br>Commissioner.

Circular No. 136.
$W . \& M$.

## Department of Inland Revenue, Ottawa, Oct. 31st, 1876.

SIR,-You are required to make a return on the 30th September, 31st December, 31st March and 30th June in each year, on the form O. 19 supplied for that purpose by the Department, of all Weights, Measures and Balances submitted to you for verification during the preceding quarter. The first return to include all transactions prior to the 30th September, 1876.

> I remain,
> Your obedient servant,

A. BRUNEL, Commissioner.

Circular No. 138.
$W, \mathbb{M}$.

Department of Inland Revenue,<br>Ottawa, Nov. 28th, 1876.

Sir,-Adverting to circular No. 133, I am now further to instruct you that in the performance of your duties you are not, until further directed, to insist upon the inspection of Weights and Measures or Weighing Machines that are in possession of dealers in such articles but not actually unpacked or exposod for sale.

You will notify such dealers in your division of the above order, as may be interested therein, and at the same time inform them that you are to inspect and verify such portion of their stocks as they inay from time to time desire.

> I am,

Your obedient servant,
A. BRUNEL,

Commiss:oner.
To.
Deputy Inspector of Weights and Measures.

Oircular No. 139.
W. \& M.

> Department of Inland Revenue, Ottawa, Dec., 1st, 1876.

Sir,-In reference to the issuing of Indentures of verification of Weights and Measures, I have to call your attention to paragraph " L " of circular No. 115, and to memorandum in red, entitled : "Amended Instructions for Stamping Indentures," from which you will see that it is absolutely necessary that the particulars of test be carefully endorsed in duplicate as shewn on back of sample sheet. You will also observe that form O. 7 is to be used for Weights and Measures only. Each class under its own head, and that form O.7.B. is to be used for Balances, Platform Scales, Steelyards, \&c.

I am,
Your obedient servant,

A. BRUNEL,<br>Commissioner.

Circular No. 140.
$W . \& M$.

> Department of Inland Revenue, Ottafa, Dec., 11th, 1876.

Sir,-You have already been notified that you are not to incur any expenditure, except in the most ordinary matters and in cases of absolute and urgent necessity without authority first obtained from this Department.

In order that your accounts may in future be andited without delay, you will write on each voucher or opposite to each item in the summary of account the number of the Departmental Ietter by which such expenditure may have been authorized.

I am,
Your obedient servant

## A. BRUNEL, <br> Commissioncr.

To the
Deputy Inspector of Weights and Measures.

Return of the Weights an 1 Measures Inspected during the Half-ycar ended Verified, Rejected and Verified after First Rejection for each


## DIX V.

${ }^{31} 1_{\text {st }}$ December, 1876 , showing the Total Number Brought for Verification, $D_{i v i s i o n ~ f o r ~ e a c h ~ P r o v i n c e, ~ a n d ~ f o r ~ t h e ~ w h o l e ~ D o m i n i o n . ~}^{\text {a }}$


Return of Weights, Measures and

V.-Continued.

Weighing Machines Inspected, \&c.-Continued.



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## V.-Concluded.

Weighing Machines inspected, \&c.-Concluded.


Return showing the Number of Dominion and Tolerated Measures of Capacity, each Inspection Division, during the


DIX VI.
Balances and Weighing Machines of each denomination Iuspected and Verified in Half-year ended 31st December, 1876.


Retcrn showing the Number of Dominion and Tolerated Measures of Capacity,


Balances and Weighing Machines of each denomination, \&c.-Concluded.


Retcrn showing the Number of Dominion and Tolerated Weights and Lineal during the balf Year

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\hline Durham \& \& \& ．.... \& 76 \& 85 \& 148 \& 146 \& 82 \& 52 \& 48 \& 35 \& 21 \& 10 \& 5 <br>
\hline Elgin \& \& \& $\ldots!$ \& 50 \& 38 \& 233 \& 199 \& 17 \& 17 \& 161 \& 17 ！ \& 11 \& 12 \& 1 <br>
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\hline Ontario \& 10 \& \& 67 \& 164 \& $3 \cdot 5$ \& 727 \& 663 \& 186 \& 10.4 \& 104 \& 101 \& 109 \& 88 \& <br>
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\hline Peterborough \& \& \& 14.18 \& 25 \& 74 \& 207 \& 202 \& 66 \& 36 \& 33 \& 29 \& 20 \& 13 \& 3 <br>
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$$ \& \& \& \& \& \& ．．． \& ．．．． \&  \& \[

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\hline Montmagny \& \& \& \& \& \& \& \& \& \& 1 \& 1 \& 1 \& \& ．．．．．． <br>
\hline Muntreal ．．．． \& \& \& ．．．1 2 \& \& \& 216 \& 232 \& 162 \& 121 \& 120 \& 117 \& 103 \& 78 \& ．．．．． <br>

\hline Quetre．．． \& \& \& $$
\ldots \cdot \mid \ldots
$$ \& \& ．．．．． \& 24 \& 26 \& 21 \& 20 \& 22 \& 22 \& 16 \& \& <br>

\hline Richelieu． \& \& \& $$
\begin{array}{r|c|}
\hline 5 & \cdots 10 \mid
\end{array}
$$ \& 14 \& 10 \& 75 \& 61 \& 35 \& 31 \& 31 \& 15 \& 11 \& \& ．．．．． <br>

\hline Sagnenay \& \& \& $$
\ldots \mid \ldots . .
$$ \& ．．．．． \& 3 \& 151 \& 172 \& 147 \& 113 \& 110 \& 94 \& 43 \& \& ．．．．． <br>

\hline Terrebonne．． \& \& \& ．．．．．．｜．．．．．．｜ \&  \& $$
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$$ \& \& \& \& \& \& \& 71 \& \& ．．．．．＊ <br>

\hline
\end{tabular}

Measures of each Denomination, Inspected and Verified in each Inspection Division ended 31st December, 1976.


and Lineal Measures of each Denomination, \&c.-Continued.


Return showing the Number of Dominion and Tolerated Measures of Capacity and each Inspection Division, during the


Balances, and Weighing Machines of each denomination, Inspectdd and Rejected in half year ended 31st December, 1876.


Rerurn showing the Number of Dominion and Tolerated Measures of Capacity and each Inspection Division, during the


Balances, and Weighing Machines of each Denomination, Inspected and Rejected in half year ended 31st December, 1876.


Return showing the number of Dominion and Tolerated Weights and Lineal Division, during the half year


Measures of each Denomination, presented for Verification in each Inspection ended December 31it, 1876.


## Retcrn showing the number of Dominion and Tolerated Weights


and Lineal Measures of each Denomination, \&c.-Continued.


Return showing the Number of Dominio and Tolerated Measures of Capacity and each Inspection Divinion, during the


Balances, and Weighing Machines of each Denomination, brought for Verification in half year ended 3ist December 1876.



Capacity, and Weighing Machines, of each Denomination, \&c.-Continued.


Retiar showing the Number of Dominion Tolerated Weights and Lineal Measures Division, during the half Year

of each Denomination, Inspectel and Verified after first Rejection in each Inspection ended 31st December, 1876.


Return showing the Number of Measures of Capacity and Balances of each Division, during the half year


Denomination Inspected and Veritied after first Rejection, in each Inspection ended 31st December, 1876.

Statement thowing the dinposition of the Weights and Measuros Standards.


|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }_{\text {At St. } \mathrm{Hjgac}}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Manitoba Districl ........... | 1 |  |  | 1 | 11 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| vision :-. |  |  |  |  | .......... |  | 1 |  |  |  |  | 1 | 1 | 1. |  | 40 |  |  |  |  |
| Total Distributed .......... | 7 |  |  |  |  | ${ }^{80}$ | ${ }^{86}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 1 |  |  |  |  |  | . | - |  | . |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |
| In nse in he deparament |  |  |  |  | 111 | 1 | 1 |  |  | $\cdots$ | ${ }_{1}^{1}$ |  | , | 1 | .... |  |  |  |  |  |
|  |  | 131 | 10 | 5 | 6-5 | 18 | 12 | 19 |  | 100 | 10 | 20 | 18. | 20 | 20 | $100^{2}$ | 2 | ${ }^{3}$ |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | ${ }^{14}$ | ${ }^{10}$ | ${ }^{14}$ | ${ }^{14} \cdot 14$ | 100 | 100 | 100 |  |  |  | 10012 |  |  |  |  |  |  |  |  |

APPENDIX VII.
Details of Expenditure on Gas Testing Offices, showing the Cost of Instruments, Fitting and Office Furniture,
Expenditure. $\mid$

|  | 䈁 |
| :---: | :---: |
| - $\times$ |  |
| $\bigcirc$ |  |

## APPENDIX VIII.



Return of the Illuminating Power and Purity


40 Vict
DIX IX.
of Gas, for the Year ending 31st December, 1876.


## APPENDIX X

Statement showing the total number of Gas Inspection Standards received and how distributed.

| Orrices. |  |  |  |  |  |  |  | Remaris. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Montreal...................... | 2 |  | 1 | 1 | 1 | 1 | 1 |  |
| Toronto ........................ | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| Hamilton..... .... ............. | 1 | ..... | 1 |  | 1 | 1 |  |  |
| Ottawa.. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| Halifax ......................... | 1 | 1 | 1 | 1 | 1 | 1 | ... |  |
| St. John ............... ........ | 1 | ...... |  | 1 | 1 | 1 | ... |  |
| Quebec.. .......... ............. | 2 |  | 1 | 1 | 1 | 1 | 1 |  |
| Brantford |  | 1 |  | 1 | 1 | 1 | . |  |
| Fredericton................... | 1 | ... | .... | 1 | 1 | 1 | . .. |  |
| Pictou....... .................. | . | 1 | . ... | 1 |  | 1 | ......... |  |
| New castle....................... | .... | 1 | ... | 1 | 1 | 1 | .. .. |  |
| Chatham....................... | . ... | 1 | ...... | 1 |  | 1 | .. ... |  |
| Dept. of Inland Revenue...! | ...... | ..... |  | 1 | 1 | ......... | ......... |  |
| Total number of Instruments fitted for use..... | 10 | 7 | 6 |  | 11 | 12 | 4 |  |
| Yarmouth... .................. | ........ | 1 | ...) | 1 |  | 1 | . 7 |  |
| Cbariottetown................... |  |  |  | 1 | 1 | 1 | .. | These instruments will be |
| London........................ | 1 | ......... | 1 |  |  | 1 | ... | fitted at these places. |
| British Columbia....... ..... | 1 |  | 1 | 1 | 1 | 1 | ...... |  |
| Quebec .......... .............. |  |  | 1 | 1 | 1 | 1 | ......) | -Tbese instruments are in |
| Montreal........................ |  |  | 1 | 1 | 1 | 1 |  | stock ready ford distribe- |
| Ottawa ......................... | 7 | 2 | 10 | 4 | 4 | 2 | ...... | tion |
| Total number of Instruments received | 20 | 10 | 20 | 30 | 20 | 20 | 4 |  |

## APPENDIX XI.

INSPECTION OF GAS
Regulations respecting the verification and testing of Gas and Gas Meters ..... 115
Answer to requsition to test meters ..... 118
Circular 130, Instructions to Inspectors of Gas and Gas Meters ..... 118
Departmental Regulations for the testing of Gas and Gas Meters. ..... 121

APPENDIX No. XI.

# INSPECTION OF GAS \& GAS METERS; REGULATIONS and instructions. 

EXTRACT FROM THE "CANADA GAZETTE," FEB. 12, 1876.

## Regulations respecting the verification and testing of Gas and Gas Meters, under the Acts 36 Vic., chap. 48, and 38 Vic. chap. 37.


#### Abstract

1st. Copies of all models deposited in the Department of Inland Models Revenue and legalized by the Order in Council of 15th December, deposited. 1874, having been verified under the direction of the Minister of Inland Revenue, such copies shall hereafter be known as "Local Gas Standards," and a sufficient set thereof shall be placed in such places as may be necessary for carrying out the provisions of the Acts above cited, in suitable offices provided for that purpose.


2nd. The "Local Gas Standards" shall be placed in the custody of Local standuly appointed Inspectors or Deputy Inspectors, who shall be re- dards. sponsible for their safety, and shall have sole possession of them; and it shall not be lawful for any person-except such as are duly authorized thereto-to have access to or use any of the said "Local Gas Standards."

3rd. Whenever there is reason for supposing that any of the said Verification of standards have become inaccurate-as to which the Inspector of standarda. Gas or some superior officer of the Inland Revenue Department, shall be the sole judge-such standards shall be tested by such portable instruments as may be determined by Departmental Regulations, or the standards supposed to be defective may, if deemed necessary by the Denartment of Inland Revenue, be removed to Ottawa and verified by the original models.

4th. When gas meters have been verified and found to be correct Stamping gas within the limit of error tolerated by the Statute, the Inspector or metern. Deputy Inspector, shall affix a seal thereto, which seal shall be of wax bearing such device as may be directed by Departmental Regulations.

5th. Under the authority of the Act 38 Vic., chap. 37, sec. 37, it Limit of is hereby declared that sulphur in gas shall be considered as in ex- sulphar and cess, when found in greater quantity than twenty grains in one ammonia. hundred cubic feet of gas, and that ammonia shall be considered as being in excess, when the quantity found is seater than two grains in one immedred cubie feet of gas.

Roference to 6th. The forms in Schedule A shall be used for granting certifischedules. cates respecting the verification of meters and the testing of gas, and no certificate shall be valid unless it is given on the form hereby authorized, nor unless stamps representing the authorized fees payable for such a certificate are attached thereto and cancellod in accordance with the Departmental Regulations then in force.

7th. Schedule B attached hereto is a schedule of fees which shall be paid for the verification of meters and for testing gas, and the fees made payable simply for testing or verifying meters shall be payable whether such meters are stamped or rejocted.

## SCHEDULE A 1.

> Gas Inspector's Office, 18
Certificate of I hereby certify that
I have-
illuminating tested the Illuminating Power of the gas furnished by
in accordance with the provisions of the Act to provide for the inspection of Gas and Gas Meters, and that the Illuminating Power of the said gas was equal to that of standard candles. The fees amounting to (Attacb Stamps here) \$. have been paid and the stamps Nos. representing said fees, are hereby attached.

Inspector,
See particulars of experiments hereto attached.

## SCHEDULE A. 2.

Gas Inspector's Office,
18


Gas Inspector's Office.

## 18



No. , manufactured by and found the same
(Attach Stamps here)
The fees amounting to \$ have been paid, and the stamps Nos. representing said fees are attached hereto.

## Inspector.

## SCHEDULE B.

1st. Verification and Testing of Gas and Gas Meters.
Fee to be charged for the verification of gas meters and the test- Fees for test. ing of gas under the Act 36 Vic ., chap. 48. ing meters.

1st. Verification of Meter.

and for every addition of twenty ligits or under a charge of eighty cents.

2nd. Inspection as to Illuminating Ioneer.
For every certificate as to illuminating power....... \$300
For a certificate as to average illuminating power
during one week..................................... 0 on
For a certificate of illuminating power by inspection made at the request of and in the presence of a consumer after due notification. 400
For a certiticate as to the presence or absence of Sulphurated Hy drogen.

150

For a certificate of an analysis for quantity of Ammonia.

310
For a certificate of analysis for average quartity of Sulphur and Ammonia during one month... 1000
3rd. For each requisition for water or gas inspection
with notice to opposite party............................ 05
117

Privy Council Chamber, Ottawa, 11th Feb., 1876.

I hereby certify that the foregoing regulations respecting the verification and testing of gas and gas meters, with the schedule thereto annexed, were submitted to and approved by His Excellency the Governor General in Council on the 10th day of February instant.

W. A. HIMSWORTH, Clerk, Privy Council.

## Gas Inspretion Office,

187
To
Reply to In answer to your requisition to have your gas meter requisition have mete inspected. inspens:ed, I beg to state that in conformity with Sections 24, 25 and 26 of the Gas Inspection Act of 1873, and with the Order in Council of 11th February, 1876, the following preliminaries have to be observed:

1st. After receiving your requisition I am required to give at least 24 hours notice to the gas company of the hour at which the inspection will take place.

2nd. You must prepay the expense attending the notification, the removal of the meter, its inspection and replacement if correct. Such expense will ultimately be borne by the party against whom the decision is given, and should the decision be in your favour, the sum prepaid by you will be refunded.

> I am, your obedient servant,

Inspe:tor.

Cireukarño. 130.
cam.
Departirentiof Inland Revenue, Ortawa, 20th September, 1876.

## INSTRUCTIONS

TO INSPECTORS OF (iAS AND GAS METERS.

Requisition A.-Form No. 2, General Series, is a form of Requisition for for books and fees. Blank Forms, Books, Stationery, \&c., in which are to be filled in, name of division, place where office is located, consecutive No. of Requisition, designacing No., description and quantity or number of forms, \&c., required, with signature below.
B.-O 13. Pay List.---The Inspector will fill up two copies of the Pay lists.

Pay List in accordance with the figures on the last Pro Forma List sent to him, one of which is to be immediately forwarded to this Department, and the other when he presents his cheque for payment, is to be left at the Bank. The name of the Bank is to be inserted in the blank left for that purpose, and under this the officer will sign his name on the line on which the amount of his salary appears. The officer will be careful to fill up endorsation on back of Pay List before forwarding to the Department.
C.-.O. 16. Monthly Return of Stamps.---Statement A. is to be Return and filled upon the first day of each month for the month just then closed, and forwarded to the Department by the first mail thereamounts after. It will be seen that, on the debit side, column 6 , will be the aggregate of columns 2 and 4, and column 7, the aggregate of columns 3 and 5 . On the credit side the figures for column 14 , are found by adding columns 8,10 and 12 , and the addition of columns 9,11 and 13 , will form the amount to be placed in column 15, column 6 must agree with column 14, and column 7 with column 15. Statement $B$, is intended to show the total amount collected during the month, and at what dates, and in what Bank, these collections are deposited to the credit of the Receiver General. No balances of collections will be permitted to be carried forward from one monthly account to the next. It will therefore sometimes be necessary to make a deposit on the first day of a month to close the transactions of the previous month, and such deposit must be entered on the return for the month in which the amount was collected.
D.-No. 11. General Contingent Account.-At the end of each Gontingenquarter of the fiscal year (or oftener if the advance made to cies. meet contingencies is likely to be exhausted) a statement of expenses incurred is to be prepared, when, if possible, vouchers are to be procured from the parties to whom the money is paid. The particulars of items for which receipts cannot be obtained are to be neatly written on foolscap paper. Each separate voncher is to be entered on form No. 11, the amount placed in appropriate columns and extended ints the "total" columo. All the vouchers will then be attached to the "Contingent Account," at the upper left hand corner, the whole neatly folded and endorsed, and forwarded to the District Inspector, who, after examination and approval, will mail it to the Department. Upon approval by the Commissioner, a cheque for the full atisunt will be issued, thus maintaining the "advance" at its original amount. An exception will be made, however, in the case of the last account for the fiscal Year, when, if the account be less than the "advance" the Inspector will deposit the difference to the credit of the Receive.. Cieneral as a "refund of Gas Inspection contingencies," obtaming therefor a draft, \&c., as in the case of collections. If the amount exceed the "advance," a cheque will be issued for the !!ference. Thus, in either case, a complete settlement of the contingencies of the fiscal year will be arrived at, and a new "advance" will be made early in the following year.
E.-No. 13., General Series, is to be used to acknowledge the Receipt receipt of cheque, from the Department. Cheques in payment for chequea.
of salary are not subject to this regulation, as they are not issued by the Department.

Supply F.-Regulation as to the supply and use of was stamps, in accordance of stamps. with the provisions of the "Gas Act," 36 Vic, cap. 48.

Supply of Stamps.--Adhesive Stamps will be supplied by the Department on requisition being made by the Inspector, who will be careíul to make requisition sufficiently in alluance to insure having at all times a supply on hand to incet the domands of his District.

Denomination of stamps

The Stamps for (ras Inspection are of the following denominations:

| No. 1 | value | 25 cents. | No. 5 | valu | \$. 00 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ' | " | 50 " | " 6 | " | 3.00 |
|  | , " | \$1.00 | " 7 | " | 4.00 |

Accounting G.-On receipt of a parcel of stamps, the Inspector is immediately for stamps. to count them, and if they are found to be in accordance with the form of receipt accompanying the parcel, he is to sigh, date and return the receipt by the next mail, and enter the stamps on the debit side of the account hereinafter mentioned; if they are not correct he must immediately advise the Department of the error and enter the exact number received by him the debit of his stamps accolut. A sepanate account of each denomination of stamps is to be kept by each Inspector by way of debit and credit, stating on the $\mathrm{Dr}_{1}$. side the number received, and on the Cr. side the number issued, in the form atached to inside of cover of Label Book K. 21, in which form it will be observed that the footing of column No. 13 added to the last line of column No. 14 will, if the account is truly kept, equal the footing of column No.7. The entries in column 14 will show the exact number on hand at any given date.
Uee of stamps. II -Use of Stamps.-After filling up a certificate of Test, and after the fees for such verification have been paid, a stamp or stamps, representing the amount of fees chargeable for such test, will be securely affixed by the Inspector to the space left blank for that purpose on each Certificate of Test, Form P. 7, P. 8. P. 9. The certificate will then be delivered to the party who requested the inspection of a gas meter, or the test of the illuminative power or purity of gas.
Cancellation. I.-_The cancellation of stamps is to be effected by the Inspector immediately after affixing them to the certibicate of test, writing across the blank space in the middle of each stam $\mathrm{i}_{\mathrm{i}}$, his initials and the date as shown in samples.

Note.-In asking for a new supply of books, the Inspector will make requisition for them sufficiently in advance of requirements to afford time to have them made to order and forwarded before those in hand are quite used up, and in asking for books containing forms consecutively numbered, he will quote in the requisition the last No. of fom comamed in the lant copy then on hand of the book asked for.

## A. BRUNiLL,

Comimissioner.
To

Circular No. I41.

GA8.

> Department of Inlani Revenve, Otrawa, Jamuary 2nd, 1877.

Sir,---1st. I beg to direct your attention to the Act 36 Vic., cap. Circular to 48 , sertions 14-16, by which you will observe that the law requires gas companies Gas Companies to have the inspection of all their meters in use, compleied within seven years from the passing of the Act, that is by the 23rd May, 1880.

2nd. It is obvious that the inspection of all the meters in use will occupy a considerable period of time, and the convenience of all parties will be best consulted by the gradual accomplishment of the work, :and I may observe with reference to the larger cities that the period lecween the present time and May, 1880, is not more than is necessary for their proper inspection by a single inspector.

3rd. Inder the circumstances I deem it necessary to direct your attention to the matter, and at the same time to remind you that the Department will have no alternative, but to prosecute in every case where moters are illegally in use.

> I have the honor to be, Your obedient servant, $$
\text { A. BRUNEL, }
$$ Commissioner.

## ART 1-TECHNICAL INSTRUCTIONS TO GAS INSPECTORS AS TO METERS.

## Department of Inland Revenue, March 1, 1876.

The following Regulations for the Inspection and Testing of Gas and Gas Meters, having been approved by the Department of Inland Revenue, are to be strictly observed by all persons employed by the Department on that service.

> A. BRUNEL, Commissioner.

## DEPARTMENTAL REGULATIONS

FOR THE VERIFICATION AND TESTING OF GAS AND GAS METERS, UNDIR THE ACTS 36 VIC. CAP. 48 , AND 38 vIC. CAP. 37.

## Inspection of Gas Meters.

A. Fitting up, adjusting and preparing the instruments:-

1. Place the tank in the position which it is to occupy, on a firm and level base.
2. Place the graduated bell within the tank, with the sidewhich carries the brass numbered badge to the front of the tank. Take care in putting the bell into the tank that the bottom guide rollers are within the guide grooves which extend from the top to the bottom of the tank.
3. Place the two pillars in their respective positions (indicated by corresponding numbers or marks) on the top of the tank, and secure them loosely but safely to the tank by means of the bolts furnished. In setting the pillars up, take care that their guide ribs fall between the flanges of the gaide wheels on the top of the bell.
4. Place the beams on the tops of the pillars so that that end of the beam which has blocks or seatings for the wheel standards to rest upon, shall, with a 10 cubic feet gasholder, be on the right hand side, and with a 5 cubic feet $r$ asholder, on the left hand side. Screw the beam securely, but not too tightly, to the pillars, by means of the serews provided.
5. Determine by moans of the screw holes in the beam seatings and in the fanges of the wheel standards which standard is to be placed on the front side of the beam. Into the bearing of this front standard insert the short joumal of the spindle of the wheel, and also pass the longer jommal through the bearing of the back standard. Lift the standards ant wheei into pasition on the beam, and secure thereto by means: of the serews prorited.

If the V shaped groove of the whee be at all greasy, the grease must be completely removed, and the $V$ surface dusted with emery or similar powder, otherwise there will be danger of the whecl slipping when the compensating weight is attached, and the bell is raised to its full elevation.
6. Attach the copper cord by means of its nut to the bell, pass the cord over the wheel and suspend the back weight by means of its hook to the eye on the free end of the cord.
7. Place the compensating curve, with its grove outwards in relation to the beam, on the square end of the wheel spindle, and secure with the nut. Attach the compensating weight to the nut at the end of the cord, and pass the latter into the groove, so that the weight hangs freely from the curve. With the bell resting on the bottom of the tank, turn the wheel until the cords cut or cross the centres of the two holes which are stamped in the plate of the compensating curve.
8. Place the loose weights, viz.,

Five $\frac{5}{10}$ of an inch pressure weights,
Two $\frac{2}{10}$
One $\frac{1}{10}$
upon the back weight.
Adjusting.
9. Next, carefully observe whether the cord by which the weights are suspended hangs parallel with the pillars when regarded both from the side and front of the gasholder. If it does not, the base upon which the gasholder stands must be re-adjusted or the tank be substantially and fairly underpacked where needful, until the cord does hang in the manner indicated, or, at all events, very nearly so.
10. Now charge the tank with water up to the height indicated by the water-line socket, which is a few inches below the top of the tank.
11. At this stage it is advisable to try the working of the instrument. To do this, place a two pous d weight on the counterbalance, when, the cocks being open, the bell should rise easily to its full elevation. Supposing this to be the case, remove the two pound weight to the top of the bell, as near to the centre as possible, and the bell should descend with freedom. If there should be any excess of friction, the bell may cease to move, or move very sluggishly. In such case adjust the pillars, the wheelstandards, \&c. (all of which can be sufficiently shifted to ensure freedom in the motion of the bell), and oil the several bearings. Finally, fix the screws and bolts of the various parts. If excessive friction be still manifested, examine the bottom rollers of the bell and the guides in the tank in order to see if they have been injured. There ought to be no difficulty in adjusting the instruments to work easily under an operating weight of two pounds. Every gasholder has been proced to be effective under such operating veight, and even under a lesser weight.
12. Fix, the thermometer and pressure gauge (the latter charged with water to the zero line) in their places on the standpipe. Put the plugs which carry the pointers into the sockets on the edge of the tank. The pointers should be about $1 \frac{1}{4}$ inch above the level of the tank, and to bring the 11 cubic foot line of the scales level with the pointers, the bell mast be slightly raised. Raise the bell until the 11th, or top line, is cut by, or coincides with the pointer of the front. Adjust the back pointer, if needful, till it coincides also with the 11th cubic foot line of its scale. Close the cocks, and again put a two pound weight on the counterbalance, then partly open one of the cocks and allow the bell to rise until the 10th cubic foot line is opposite the front pointer, instantly close the cock, and see that the pointer at the back is also opposite the 10 th cubic foot line of scale. Proceed in this way with every numbered line to zerr, then remove the two pound weight and also a ${ }_{10}^{2}$ th weight, and repeat the operation with the bell decending. The scales have been in absolute agreement when graduated, and should, when the holder is refitted, agree to within less than $\frac{10}{10}$ th of a cubic foot division in rising, but in descending there may be a little greater discrepancy, owing to the swing or piay which must be allowed, to ensure freedom from friction. If the scales disagree to any considerable extent, with a rising bell the level of the tank must be readjusted so as to bring the scales into closer agreoment. It may be remarked, however, that readings are seldom taken from the back scale, as the measurement by one scale is sufficiently accurate.
13. Finally raise the bell to its full height, close both cocks, Tosting the romove all the loose weights, leaving only the back weight hanging to the cord, and let the bell descend until the zero line of the observed scale is opposite the pointer. If any leak exists, examine holders and and make sound the junctions of the thermometer, of the pressure guage, the left hand top screw of the latter, and of the plug at the bottom of the front stand-pipe. When apparently quite sound, let the bell remain up subject to 3 inches pressure for at least half an hour. The plug at the bottom of the stand-pipe closes an oponing by which any water accidentally driven into the stand-pipe may be allowed to escape.
14. After the gasholder has been put into use, it should examined at least weokly :-

1st. In respect to height of water in the tank.
2nd. Soundness.

3rd. Position of compensating cord in relation to gauge holes in the plate of the compensating curve.

## B. Preparing the Instruments.

Temperature.

1. Maintain the temperature of the room as nearly as possible at the standard temperature $63^{\circ}$ Fahrenheit, and before using the instruments allow the water in them to stand sufficiently long to have approsimated to the temperature of the room.
Precautions 2. Before proceeding with a test examine all connections and against leak- be sure that there is no leakage.
2. To discover lakage fill the holder, remove all the weights close the outlet of connections and open the outlet cock of the holder. If there is a pressure gange between these two cocks, close the outlet of holder and observe if the pressure gatuge continues to show 3 inches of persure. If it does not the connections are not sound (should there be no pressie gatge the outlet cock of the holder should remain open, and it the scale of the holder remains stationary there is no leakage.)
3. If either of these tests denote a leakage it becomes necessary to locate it, to do this brush all the joints with soap-suds when the bubbles formed by the escaping air will at once indicate the leak.
4. The connections being sound place the weights again on the holder and the instruments are ready for use.

## C. Testing the Meters for Soundness or Leakage.

Preparing a meter for verification.

## Soundness test.

1. Place the meter on the test table and remove the corks in the unions, if it be a wet meter unscrew the charge and syphon plugs, and pour water into the meter at the upper or charge plug until it flows freely from the lower or syphon plug. Allow the water to cease dripping and then replace the plugs.

The water used in the meters should be of the same temperature as the water in the tanks of the holders and if there be no cistern in the Test Room, the water used should remain standing in the roon for about twenty-four hours or until its temperature corresponds with that of the water in the tanks; or if the temperature has to be raised warm water may be added.
2. Connect the outlet of the holder with the inlet of the meter and the outlet of the meter with the exit for air, taking great care in making the joints.
3. All cocks being closed, remove the weights from the gasholder until the pressure guage indicates 3 inches. Now open the outlet of holder, and in cases where the water joint is not available proceed as in $\S \mathrm{B}_{3}^{3} 3$ to test the soundness of the counectio with the meter.
, "ntan
4. If this connection is good proceed to test the meter for soundness. Open the exit cock until air passes through the meter at the rate prescribed by the Act, which will be found tabulated is schedule A.
5. If the upper divided dial or small index drum registers in something like agreement with the holder scale the meter may be considered as sound.
6. Reduce the pressure from 3 inches to one inch and to ${ }_{1}^{5}{ }^{5}$ ths of an inch, and if the water in the pressure guage does not oscillate more than ${ }^{2}{ }^{2}$ ths the meter may be considered as working with sufficient regularity.

Now proceed with

## D. Test for Percentagl of Error.

1. The meter being connected as before described and the Percentage of holder full, adjust the weights to one inch of pressure and the error test.
pointer of the gasholder to the zero of the scale. Turn on the outlet cock of the holder and adjust the exit cock until the meter passes air at the rate marked on it (or insert the exit nozzle, corresponding to the size of the meter and to the pressure, in the outlet of the meter), shut off the out!et cock of holders.
2. Next with the holder filled and the pointer of the holder at the zero of the scale and the pointer of the index dial or drum of the meter opposite a numbered division, open the outlet cock of the holder and pass air through the meter until the index of the meter has made an entire revolution, then shut off the outlet cock beyond the meter, and read off the scale. If, as very seldom happens, the readings of holder and meter are in perfect agreement, and the temperature at outlets of meter and holder are in agreement, the meter will be correct.
3. If there is not a perfect agreement the temperatures at outlets of holder and meter should be noted and also the readings of the meter and holders.
4. First correct for difference of temperature.
(a.) Look at Dilatation Table, schedule B and observe the percen-

Rules for correction for differences of differences of
temperature. tage of dilatation due to each temperature and take the difference
these perceutages and observe the following rules for correction:
(b.) With air at outlet of metre at a higher temperature than at outlet of holder.

The tabular percentage of difference calculated on the holder reading is to be added to the holder reading,
(c.) With air at outlet of meter of a lower temperature than at the outlet of holder.

The tabular percentage of difference calculated on the meter read ing is to be deducted from the holder reading.

Then from table supplied with the instruments find the percentage of error.

Example 1.

| Temperature at outlet of meter | $62^{\circ}$ |
| :---: | :--- |
| do | do |
| do | holder |
| $60^{\circ}$ | " |

Meter Reading 30 cubic feet Holder do 29.91 cubic foet From Dilatation Table Temperature $62^{\circ}=7 \frac{1}{2}$

Difference ${ }^{\frac{1}{2}}{ }^{\prime \prime}$
$\frac{1}{2}$ per cent. on $29 \cdot 91$ cubic feet $=149$ cubic feet
Corrected Reading of Holder $30 \cdot 06$

Find in the percentage table under heading "Meter Registering 30 cubic feet" and opposite to 30.06 will be found,- 0.20 : showing the meter to be $\frac{2}{10}$ ths of one per cent. slow and therefore within the limit of error, 4 per cent. slow allowed by the statute.

If instead of correcting for temperature the uncorrected holder reading had been taken we should have found our meter +.3 or $\frac{8}{10}$ ths of one per [cent. fast (instead of ${ }^{2}{ }^{2}$ ths of one per cent. slow.)

Example 2.

$$
\begin{array}{cl}
\text { Temperature at outlet of meter } & 60^{\circ} \text { Fahr. } \\
\text { do } & 62^{\circ}
\end{array}
$$

Meter Reading 30 cubic feet
Holder do 26.91 do
The percentage for difference of temperature being as in first example $\frac{1}{2}$ per cent., it is now to be computed on- the reading of meter 30 cubic feet.

| $\frac{1}{2}$ per cent. on 30 cuki. fect | $=$$\cdot 15$ <br> which deducted from |
| :--- | :--- |
| $=\frac{29 \cdot 1.1}{29 \cdot 76}$ |  |

Percentage of error from table +8 , or $\frac{81}{100}$ ths of one per cent. fast, within the error of 3 per cent. fast allowed be the statute.
5. Repeat the foregoing operations at a pressure of ${ }_{10}^{5}$ ths of an inch.

Test for error of wet meters at low water level.
6. If the meter be a wet meter another test has to be made. as compared with its registration at its proper level. To counteract this lowering of the water level to a frandulent extent a float and valve are provided; to ordinary consumers' meters, which prevent the passage of gas at a certain level. The test for percentage slow is for the purpose or deciding the correcteses of the meter at its lowest working level. After having made the test for percentage of error fast disconnect the outlet of meter, remove the charge plug and while the meter is working syphon out water until the meter wheel ceases to revolve, then fill carefnlly with water until the wheel of the meter commences to turn, which can be determined by observing it through the outlet opening, now reconnect outlet of meter and proceed as in the other test.
E. General Instructions.

Precaution

1. Meters brought for inspection after having been used must be against acci- corked at the inlet and outlet by the person bringing them and the dents. corks must be replaced immediately after testing.
2. When uncorked care must be taken that no light or fire is near, otherwise an explosion may ensue.

Testing of inderes.
3. If a meter in use after having been tested and stamped is discovered or supposed to have ceased to register correctly on some of the dials, the inspector at the request of the consumer or the seller of the gas to be measured by such moter will have the meter opened to examine the condition of the gearing. To tost the accuracy of the trains of wheels spin up the index until the pointer of the highest index makes one complete revolution.
4. The expense of such an examination will be borne by the party demanding it.

## TESTING ITS ILLUMINATING POWER AND PURITY.

## F. Connection of the Instrument with the Gas Service and Temperature of Test Room.

1. See that the supply pipe to any apparatus for testing illuminat Connection ing power and purity is brought from the distributing main of the with gas supGas Works at a distance of not less than 500 yards from the under. ply. taker's gasholders.
2. The supply pipe must have a regular incline from the instrument to the main and must be tree from traps, syphons, cocks, running unions, plugs, caps, or vessels of any kind accesslble to any other person than the inspector.
3. The test room must be maintained at a tomperature as nearly Temperature as possible of $62^{\circ}$ Fahr., and most not be higher than $70^{\circ}$ or lower of test room. than $\omega^{\circ}$.

## PHOTOMETER TESTS.

G. Testing for tie Presence of Sulphuretted Hydrogen and Ammonia. See diagram, Schedule C.

1. Close all the cocks.
2. Remove the glass bell (c) and place on two of the hooks strips of acetate of lead test paper (white), moistened with pure water, and on the other two hooks strips of (blue) litmus test paper slightly reddened by immersion in weak acid. Replace the bell, observing that sufficient mercury is in the groove to prevent the escaje of gas.
3. Open the cocks (a) on the supply pipe (f), (g), (3) and (5), for a few moments, to allow the air and gas in the beli or pipes to escape.
4. Shut waste cock (5) and light burner (j) on the pressure gauge, and allow it to burn for five minutes. Then shut the cocks $1,2,3$, and turn of the light, $j$.
5. If the (white) acetate of lead test papers have been discoloured it is a proof of the presence of sulphuretted hydrogen in the gas and if the reddened litmus test papers have turned blue there is an indication of the presence of ammonia.
6. Fresh papers should be used for every test and the test. papers should remain suspended in the bell during the whole time the following photometrical test is being made.

## H. Preparing tee Photometer for Testing Illiminating Power of Gas.

1. The Meter (d). Observe that the meter is level; determine adjustment this by placing a spirit level on the circular glass plate on the top of instruof the meter case. Then adjust if necessary, unscrew the charge ments. plugs and pour in water until its surface corresponds with the line scratched on the gauge glass, this done replace the plug.
2. The Governor (e). Put all the weights on the governor, unscrew the overflow plug and pour water in the tank antil it runs freely from the plug hole, let it remain until it ceases to drip, then replace the plug.
3. The Pressure Guage (i.j.) Unscrew the plug and pour water into the tank, the burner cock being open until it flows freely, when the water ceases to drip down screw in the plug and shut the burner cock, should the cords by which the float and the counter weight are suspended get out of theirgrooves replace them, the float cord in the front groove hanging on the left and the counter weight cord ill the back groove hanging to the right, with the burner open and all the other cocks closed observe that the pointer is at zero, if it is not and is considerably out adjust as nearly as possible by shortening or lengthening the cord until the pointer is slightly below the zero mark, then adjust by pouring in water until the pointer indicates zero.
4. The Balance and Burner (k). Adjust the centre of the candle holders as nearly as possible in line with the plumb lines. Do the same with the centre of the burner.

Preparation of candles.

Adjustment of pressure and rate of flow of gas.
5. Preparing the Condles. It is well to keep several candles ready beforchand so that they may be ready for testing. To do this cut a candle into two, mark the pairs and keep them for use together, carefully pare the sperm from the wick for about a quarter of an inch from the smaller end of each piece, light the candles, place them upright in a position free from draughts and let them burn until the cups are well formed, touch the wick with a piece of sperm and blow out. Place them where they will be free from injury.
6. Put a pair of candles in the suckets at the end of the balance, light them, and allow thom to burn for ten minutes.
7. Whilst they are burning adjust the pressure of the gas to $\frac{5}{10}$ ths of an inch and by means of the micrometer cock (g), adjust the supply to burn as nearly as possible at the rate of 5 cubic feet per houls.
8. Open the cock (3) marked "outlet of governor" and observe the pressure by the guage ( $\mathrm{i} j$ ) and add or take off weights on the governor at (c) until the pointer of the pressure guage is opposite or noarly opposite the first figure (5) on the index, if closer adjustment is necessary use shot in the cup on the governor. Each figured division on the pressure gauge represents 1 tenth of of an inch pressure and the subdivisions $\frac{1}{10} 1 \mathrm{~h}$.
9. Wind up the clock and start it. Stop it directly it strikes.
10. Light the burner (h) and wait until the gas hand of the meter comes under the hand of the clock. At that instant start the clock, if the two hands do not keep together increase or diminish the supply of gas by means of the micrometer cock ( g ) until the two hands tiavel at the same rate or nearly so.
11. So soon as the candles hare been burning for ten minutes stop the clock when it strikes and pull the winding cord until the hand on small time dial is at the 10 th division. Now counterbalance the candles and place a few grains of shot in the pan under them and watch the pointer of the balance (k) which should be on the left hand side at (2) of the zero division. Be ready to start the clock and to place a 40 grain weight in the pan under the candles at the instant that the balance pointer comes to
zero (0), at the same time observe the position of the large gas hand on the meter dial and record it in the Experiment Book, after which note the position of the small gas hand.
12. Close the curtains and begin the observations immediately, make an observation every time the clock strikes so that ten observations may be made by the beginning of the tenth minute.

Reading the indications of the instruments.
13. To make the observations look at the images in the mirrors of the disc box, moving it backwards and forwards on the rod until the spot or star in the centre of the dis appears, read off the position of this pointer attached to the disc box in the scale and note is the book provided for that purpose the position of the pointer at each observation.
feas Caution. While making these observations avoid looking at the candies o the gas, as they affect the eye so as to make a correct observation difficult.
14. After making the tenth obsorvation be prepared to stop the clock and observe the position of the gas hands directly the pointer of the balance tips to zero. This must be done as quickly as possible as the 40 grains of sperm will be nearly consumed. Note the readings in the book.
15. If the 40 grains of sperm have burned in less than 9.09 Rejectionvor minutes or more than 10.45 the experiment must be rejected and a experimenta. new pair of candles placed in the balance and the experiment repeated until the candles burn within the limits given.

## 1. Recording and Calculating the Illuminating Power from the Observations.

1. The accompanying diagram (p. 18.) is a specimen of a page of the Experiment Book with observations noted, dotted lines on dials observation indicate the gas hand and black lines the clock hand.
2. In the example given the mean of the photometer readings is 14.48 the observed illuminating power of the gas. If the sperm rate of consumption were 120 grains per hour and if the gas rate were five cubic feet per hour the result would require no correction, but if the consumption of the sperm or gas or of either differs from the standards named, then correction must be as hereafter directed.
3. The observations recordod in the specimen diagram will now be dealt with as follows:---
$a$. The time noted on the dial is $9 \cdot 7$ minutes during which 40 grains of sperm had been consumed. Find this ratio of consumption in col. B (of schedule B) and opposite in col. C, will be found the rate per hour of one candle, $=1 \not 23 \cdot 6$ grains.
b. The gas consumption in the diagram shows 9.28 revolutions of Rate of gae the meter. Find $9 \cdot 70$ in col. B, and opposite this under $9 \cdot 30$ (the nearest figure to $9 \cdot 28$ ) in the right hand portion of the table will be found 4.79 which is the rate of consumption of gas per hour.
c. Refer next to the photometrical tables supplied with the instru- Correction for ment, and in the table for 14.5 candles (the nearest to the 14.48 gas and recorded in the diagram) opposite to 4.8 (the nearest figure to 4.79 ) sperm ratea in the left hand column and under 124 (the nearest to $123 \cdot 6$ grains) will be found 15.61 , which is the correct illuminating power of the gas expressed in sta"dard candles.
4. When the observation shews an illuminating power in excess of nineteen and a half candles, the corrections will be made by the rule printed at the head of the table, Schedule D.
[^17]
# ART. 2.-TECHNICAL INSTRUCTIONS AS TO TESTING* GAS FOR PURITY. 

## GAS INSPECTION.

## J. Fititing, Preparing and Adjueting tere Instrumints:-

Preparation 1. Carefully wash and rinse all the glass vessels with pureof glass res- distilled water.

## sels.

Note.-Occasionally test the purity of the stock distilled water, with the followIng solutions:-

> Nitrate of Silver Solution,
> Clioride of Barium solution, and
> Nitrate of Baryteg solutlon.

To a portion of the water, add a drop of one solution; to a second portion, of another solution; and to a third portion, of another. If the water remains clear, it is pure as regards these tests. Also try it with blue and red litmus papers, the colour of which should remain unchanged. As a final test evaporate a portion of the water slowly from a watch glass, if no sediment remalns the water is pure.

```
Preparation
2. Level and adjust the meter as directed in Photometer Tests, of the instru- Sec. H. par. 1.
3. Fill the Ammonia Saturators ( \(\mathrm{S}^{\mathrm{r}}, \mathrm{S}^{v}\) ) with glass beads (supplied for the purpose,) and the condenser (C) with the glass balls accompanying the instruments.
4. Connect the parts of the instruments as shown in Diagram, Schedule E, by red rubber tuping ( \(r^{1}, r^{1}, 1^{2}, r^{3}, r^{4}, r^{5}\) ).
5. Remove the trumpet tube (T) and place about. 2 ozs. of Ammonia Carbonat around the burner, \((B)\) then replace the trumpet tube.
6. Disconnect the saturators ( \(\mathrm{S}^{\mathrm{r}}, \mathrm{S}^{2}\) ) and carefully close the glass cocks on their stems.
7. Dip the point of a 50 septern pipette into the Standard Sulphuric Acid Solution ( 10 septems=one grain \(\mathbf{N H}_{3}\) ) and suck up the solution until it is slightly above the engraved line on the upper stem of the pipette. Moisten the fore finger and press it firmly on the upper opening of the pipette. Allow any solution adhering to the point to drip off; then, by raising the fore-finger, allow the solution to run out until the lower portion of the meniscus or cup formed by the liquid in the stem corresponds with the defining line; then replace the fore-finger.

Note.-In all cases where flulds are measured in tubes or narrow vessels the lower part of the meniscus or cup (formed by captllary attraction) must be adjusted to the graduation and not the upper edge ( \(c d\) fig. 2, schedule E, Plate II). When filling a pipette with poisonous solutions, great care should be taken in sucking them up into the tube or some of the liquid may be drawn into the mouth.
8. Transfer about one-ha!f the contents of the pipette to each of the saturators, carefully rinse the pipette with a stream of distilled water from a wash bottle and add the washing to the contents of the saturators.
9. Replace the saturators on their stand and make good the connections by the red rubber tubing as before.
10. Open the outlet of the meter, by securing the lever ( \(L\) ) with the catch at the top of the meter. Open the cocks (c, \(c^{1}\), and \(\mathrm{c}^{4}\), the glass cocks on the stems of the saturators should be closed) allow the gas to pass through the meter and connections for a few moments to expel any air that may have collected there, but not through the saturators.
11. Close the cocks ( \(c^{2}, c^{4}\) ) and the outlet of meter. Set the Starting the meter index by means of the key attached to the apparatus as experiment. shown in the diagram, the large hand', upright and pointing to the top division of the main dial and the pointer of the small right hand dial to its tenth division (x) ; secure the lever (L) in its position by the catch, turn on the small glass cocks and \(\mathrm{c}^{2}, \mathrm{c}^{3}, \mathrm{c}^{5}\), quickly, remove the trumpet tube (T), light the burner, replace the tube (T), and leave the apparatus until it has automatically shut off the flow of gas.

Note.-Never use sulphur matches near the apparatus, and indeed abstain from their use in the test room. A small taper or a wax vesta may be used.
12. Record the temperature of the gas as indicated by the Temperature. thermometer attached to the meter, and also the atmospheric pressure as indicated by the barometer in the test room.
13. The regulator ( R ) should be adjusted to pass about \(\frac{1}{2}\) cubic Adjustment fo ot of gas per hour; and as the meter automatically shuts off the of gas rate. gas supply when ten cubic feet of gas or thereabouts have been consumed, it will be about twenty hours from the commencement of the test before the sulphuric acid solution acted on by the gas and the products of combustion thrown down by the condenser can be collected for analysis.

\footnotetext{
Note.-If at any time it is found that the regulator does not keep the rate of flow of the gas somewhere near the specified rate, \(\frac{1}{2}\) cuble foot per hour, it whl be mocessary to re-adjust it. Whenever a different quantity of acid solution to that to Which the apparatus has been regulated is used, this re-adjustment must be made. To make the adjustment, put in the saturators 50 septems (or a quantity corresponding to the amount of solution to be used) of distilled water and connect the apparatus as though a test were to be made, pass gas through the instruments and add or take from the weights of the regulator until gas passes at the rate above specifled. A certain amount of adjustment may be obtained by the nse of the cock cs
}
14. As sonn as the passage of gas through the meter is automatically cut off, shat the supply cock (c) and close the small glass taps of the saturators.
1.. Before proceeding farther record the temperature of the gas and the barometric pressure at the close of this part of the operation.
16. Disconnect the saturators (be sure that their taps are closed while disconnecting, ) and drain their contents into a perfectly clean 20 oz ., flavk or graduated measure, then pass distilled water through them until blue litmus test paper is no longer discoloured by the

Collecting the acid solution from the gaturators. dropping.s. Now make up the liquid in the measure with distilled water to the twenty ounce graduation, making the last additions of water drop by drop to ensure perfect acearacy. During this operation the measure should stand on a porfectly l:vel base.

\footnotetext{
Note. - When washing the saturators and also when washing the sulphur apparatus as herealter described, great care should be observed that none of the washings are lost and that the washing is complete.
}
17. Shake the washings well, to ensure uniformity in the strength of the solution. Take two clean glass stoppered sample bottles and pour exactly one-half the washings into each bottle.

Note.-There should be provided with the apparatus a small \(\frac{1}{2}\) pint measuring fask with a defining line on its neck, this should be used for dividing the washings if they have been made up to 1 pint in the first instance.

Recording obgervations and preserving the samples.

Collecting the products of combustion
18. Number and record on two labels as per sample, Schedule \(F\), the total quantity of liquid obtained and the other information called for by the labels. Seal both bottles, keeping one for present analysis preserving the other carefully for a future verification of the first analysis, if it should become necessary to make one.
19. Carefully record all observations and occurrences during the test in the book supplied for that purpose.
20. Next carefully wash with distilled water the trumpet tube (T), the condenser (C), and the tube (O), carefully collect every drop of the washings in a clean 20 oz . graduated measure, add to these the contents of the beaker \((V)\), which should also be carefully washed and drained into the flask or measure. Make up the 20 ozs. of fluid and divide into two portions as directed in par. 17, bottle, lakel, real and record observations as before directed, with regard to the saturators in this case using labols specimens of which are given in Schedule G•
21. In ail cases when testing operations have been completed, well wash and rinse with distilled water the glass-ware of the apparatus and fit it together ready for a future test, as directed in the first part of the regulations.

\section*{VOLUMETRIC ANALYSIS OF THE SAMPLES.}

\section*{K. Estimation of Ammonia.}

Testing the sample from saturators.
1. Take a 100 septem burette divided into fifths and numbered upwards. Rinse well with water, carefully wipe the outside, place a beaker under it, and fill the burette with Standard Ammonia Solution, ( 100 septems contains 1 grain \(\mathrm{NH}_{3}\) ) open the pinch cock, let the ammonia solution run out. Re-fill the burette with Standard Ammonia Solution to abore the 100 th division and draw off sufficient kolution to bring the level down to the 100 septem graduation.
2. Take a perfectly clean beaker, rinse it with distilled water and measme into it exactly one-fifth of the total quantity of liquid obtained from the ammonia saturators as recorded on the label of the rample under tent. Slightly colour with a few drops of hemainxylin solution.
Note.-Use the 4 oz . flask provided for this purpose.
3. Place the beaker containing the coloured solution under the burette, and transfer from the burette, drop by drop, (carefully stiring with a glass rod) stfficient of the Standard Ammonia Solution to change the yellow color of the sample to pink. Read off the number of septems remaining in the burette and record the reading. The last additions should be made with great care to avoid using an excess of the Ammonia Solution.
4. On a form as per sample schedule \(N\), enter all the particulars given on the label of sample, and also the observed number of septems of Standard Ammonia remaining in the burette.

\footnotetext{
Example. Suppose the label of sample has recorded on it particulars as per red type in the sample label (Schedule F) and the quantity of Standard Ammonia Solution recorded on the form be 6 septems. Get the mean temperature and barometer as shown by the form; take the table for correction of volume of gas for barometer and temperature, Schedule \(P\), opposite 29.6 and under \(74^{\circ}\), the mean atmospherio pressure and the mean thermometer readings will be found the tabular number .959. Enter this and correct the volume of gas, and work out the number of graing of ammonia per 100 cubic feet of gas as directed by the form, this will be found to be 3.15 graing.
}

\section*{L. Estimation of Sulphor.}
1. Take a clean beaker, rinse with distilled water, and pour into Testing the it the conte nts of the sample, carefully drain the bottle, then rinse \(\begin{gathered}\text { sample from } \\ \text { sulphr } \\ \text { test }\end{gathered}\) and add the washings to the leaker.
'2. Place a large watch glass over the beaker and boil the solution gently over a bunsen burner for a few minutes.
3. Add Hydrochloric Acid Solution (about 1 part acid to 8 or 10 parts of distilled water) until the sample reddens a blue litmus test paper; also, add one drop of nitric acid or of bromine solution, and shake the beaker to ensure complete mixture.
4. Make a hot solution of Chloride of Barium which add to the Precipitationc acidulated sample. Boil again, pour in a little more Baric Chloride of sulphate Solution and repeat until precipitation coases, then set the beaker of barium. aside for the precipitate to settle.
5. Place a filter paper in a funnel and a beaker under the funnel, moisten the paper with a gentle stream of boiling water, and decant the clear liquid from the precipitate on to the filter, taking extreme care that none of the precipitate is lost.
6. Boll some distilled water in a wasn bottle, and when the decanted liquid has passed through the filter, pour the remaining solution and precipitate from the beaker on to the filter. Carefully wash the beaker with the hot distilled water from the wash bottle and pass the washings through the filter. Should any more precipitate fall in the beaker under the funnel after filtration of the solution, boil and again pass through the filter.
7. Blow a gentle stream of hot water on to the powder in the filter and continue to do so until the liquid, after passing through the filter, remains clear on the addition of one or two drops of Nitrate of Silver Solution. Should the Solution not remain clear under this test, a fresh Solution of hot Baric Chloride should be added, and if more precipitation takes place should be re-passed through the filter as above described.

\footnotetext{
Note.-To subject to the test by Nitrate of Silver Solution ( 5 grains to 1 oz . of digthled water) catch a portion of the fluid from the filter in a clean test tube.
}
8. Now well drain the filter, place it on the filter dryer and put it into the drying oven.
\(\boldsymbol{y}\). While the filter is drying, heat to a white heat the platinum crucible and cover, and when they have cooled, weigh them on the Chemical Balance and record their weight.
10. As soon as the filter paper and its contents are pertectly dry, fold up the filter paper and its contents as tightly as possible, and put it into the crucible without the lid.
11. Place the crucible over a bunsen burner in an inclined position, and heat gently till the filter is carbonised, then support a lamp chimney over the crucible to increase the heat till nothing is left but a white ash.
12. Whilst the crucible is heating, pour some Commercial Sul \({ }^{-}\) phuric Acid into the pian of the Dossicator; this done, place the crucible on a cold iron surface and as soon as possible put on the lid, thea remove the Dessicator and cover it with the glass bell and finish cooling.
13. When the crucible has cooled down, quickly remove it to the balance and weigh carefully. The difference between the first and last weighing will give the waight of the powder (Sulphate of Barium) obtained from \(\frac{1}{2}\) the gas consumed. Record this weight on the form, Schedule I.
14. Enter on the form all the particulars recorded on the label of the sample and work out the result.
Exxample. The particulars of the test being as per red itype on sample label, Schedule G, and the welghed quantity of Sulphate of Barium' 7 grains, enter them on for barometric pressure and temperature as form Schedule \(\mathbf{P}\) (see italics.) Correct before, and work out the quantlty of sulphur in 100 cubic feet of gas as shown by the form (italtics,) which, in this instance, would be 20.23 grains of sulphur.
15. The sample bottle should now be carefully washed and placed in the sample box and returned to the Inspector of the Testing Station from whom it came.

\section*{M. Preparing the Standard Solutions.}

Proparation of oralic solution.
1. Oxalic Acid Solution.-Weigh accurately 185.3 grains of pure

Stock ammonia.
rystallized Oxalic Acid, which put into a clean decigallon mixer.
2. Fill the mixer to within a short distance of the top graduation, put in the stopper and shake well until the crystals are dissolved, and to ensure complete mixture.
3. Try the temperature of the solution; if the thermom ter does not indicate \(69^{\circ}\), rase or lower the temperature to the standard, and make up the quantity of solution with distilled water to the 100th graduation on the mixer. Replace the stopper and shake well with a rolling motion. The last additions of water should be made drop by drop with a pipette, and the mixer should be placed on a perfectly level base whilst reading the level.
4. Pour the solution into a clean stoppered bottle, and label it with label (p. 3. No. 1 Oxalic Acid Solution.)
5. Make a second solution, in accordance with the dircetions for No. 1 solution; and label it (p. 3. No. 2 Oxalic Acid Solation).
6. Stock Ammonia Solution. Fill a 50 septem pipotte with strong ammonia, which transfer to a clean stoppered \(\frac{1}{2}\) gallon bottle and fill up with pure distilled water and shake well.

Testing the stock ammo nia solution.
7. Fill two 100 septem burettes, one with Oxalic Acid Snlution No. 1, and the other with stock Ammonia Solution, and carefully adjust the levels of the fluids to the top division, (the zeros of the graduations,) observing the precautions deceribed in par 1, Sec. K.
Note.-The two burettes should be on a double stand, and if they are provided Wrth Eardmann's floats, the lines scratched on the floats should be adjusted to the graduations, instead of the lower part of the meniscus or cup.
8. Draw off into a clean beaker exactly 10 septems of the Oxalic Acid Solution, which colour with hematoxylin solution, then measure into the coloured acid solution sufficient of the stock Ammonia Solution to change the colour of the acid solution fiom yellow to pink. Note the quantity of Ammonia Solution used.
9. Measure into the beaker another 10 septems of acid solution and one or two drops more of hematoxylin and :gain neutralize by drawing off from the burretio containing Ammonia Solution, sufficient to change the colour of the solution, again note the amount required from the Ammonia burette to do so.
10. Repeat the operations pars. 7, 8 and 9,) with No. 2 Oxalic Acid Sulution.
11. If the total number of septems of Ammonia Solution required to neutralize 20 septems of No. 1 Acid Solution, do not agree with the number required for No. 2 Acid Solution, the estimation has not been made with sufficient care, or the acid solutions are not of equal strengths. If the tests do not agree, repeat the operations described (pars. 7, 8, 9 and 10) and if the results are still the same, the acid solutions will require adjusting or re-making.
12. When the tests produce like results; suppose twice 10 or Estimation of 20 septems of Oxalic Acid Solution, equivalent to one grain of the strength ammonia, have been neutralized by an observed quantity of Stock Ammonia Solution. Take a label, (p. 4.), paste it to a clean stoppered bottle, after writing on it the number of septems of Ammonia Solution used to neutralize 20 septems of Oxalic Acid Solution; "then pour the Ammonia Solution from the decigallon mixer into the labelled bottle.
```

    Rxample-Twice 10 - 20 septems Oxalic Acid Solution = one grain \(\mathbf{N H}_{3}\) (Am-
    monia).
Twice $25=50$ septems Stock Ammonia Solution, neutraltze (or =) 20 septems
Oxalic Acid Solution.
Therefore 50 septems Stock Ammonia Solution contain (or $=$ ) one grain of
$\mathrm{NH}_{3}$ (am monia).

```
13. Standard Ammonia Solution.-To make the Standard Ammonia Standard amSolution ( 100 septems contains one grain, Ammonia, fill a clean monia soludecigallon mixer to the division corresponding to the number of tion. eoptems written on the label of the Stock Ammonia Solution with the stock solution, and fill up with distilled water to the \(\frac{1}{100}\) th division; make the final adjastment of the level of the solution at a temperature of \(62^{\circ}\), and well shake to ensure complete mixture.
14. Test the strength of this Standard Solution by means of the burettes as described, (pars 7, 8, 9 and 10) except that 20 septems of Oxalic Acid Solution, in this instance, should be neutralized by 100 septems of Standard Ammonia Solution. If more than 100 septems are required, increase the strength of the Standard Ammonia Solution; if less, weaken it, and retest until the proper strength is indicated.
15. When the Standard Ammonia Solution has been adjusted to the proper strength ( 100 septems contains one grain of Ammonia) pour it into a clean stoppered bottle and label 100 septems \(=1\) grain \(\mathbf{N H}_{3}\) (p. 2).
16. Stock Sulphuric Arid Solution.-Measure into a half gallon Stock sulbottle, half filled with distilled water, one and a quarter or one and phuric acid. a half fluid ounces of pure Sulphuric Acid; which fill up with distilled water and shake well.

Note.-Pour the Acld into the bottle in a gentle stream.
17. Allow the solution to cool down to \(62^{\circ}\) of temperature and fill the two burettes as before directed (pars. 7, 8 and 9 ;) but, this time, one with the Stock Sulphuric Acid under test for strength, and the other with Standard Ammonia Solution. Do not forget before filling the burettes to risse and to) pass through one a portion of Acid Solution and through the other a portion of Ammonia Solution. In this test, instead of testing 10 septems at a time, test 5 septems of the Stock Sulphuric Acid Solntion, and in all 25 septems.
18. Calculate the strength of the Stock Sulphuric Acid Solution Estimation of thus: As the total number of septems of Standard Ammonia Solution the strength producing neutralisation is to 100 (i.e. to one grain of Ammonia) so of the stock are 25 septems of Stock Sulphuric Acid Solutionto the number of sep- solution.
tems of Stock Sulphuric Acid Solution equivalent to one grain of \(\mathbf{N H}_{3}\) (Ammonia.)
Example.-Suppose each neutralisation of 5 septems of Stock Acid required 00 septems of Standard Ammonia Solution, that is 300 septems for 25 septems of Acid Solution.
\(300: 100:: 25: 8.33\) (the number of septems of Acid |Solution equivalent to one grain \(\mathrm{NH}_{3}\).
19. Mark the strength of the Stock Acid Solution on a label (p. 5.) which paste on a clean stoppered bottle and pour the Acid Solution into the ebottle.

Standard sulphuric acid
20. Standard Sulphuric Acid Solution.-Fill up the clean decigallon mixer to the division corresponding to ten times the number of septems marked on the Stock Sulphuric Acid Solution, and make up with distilled water at the standard temperature \(62^{\circ}\) to the 100 th division and shake well.
21. Test this solution as before directed, except that 10 septems of Standard Sulphuric Acid Solution require 100 septems of Standard Ammonia Solution to produce neutralisation.
22. When the Sulphuric Acid Solution has been made up to the standard strength, bottle it and label, 10 septems \(=1\) grail \(\mathbf{N H}_{3}(\mathrm{p} .1)\).

\section*{N. Miscellaneous Instructions and Precautions.}

Necessity of care in washing and clean
sing instrument.
1. Always wash and rinse with distilled water all glass-ware before putting it away.
2. Always use clean bottles for solutions, well washed and rinsed with distilled water and perfectly dry, so that the solutions may no \(\$\) be weakened.
3. Always clean all vessels before proceeding from one part of a test to another if the same vessels are to be used all through. This is particularly necessary with vessels which have been used with Acids and Ammonia Solutions. Suppose for example the Sut phuric Acid Solution taken from the Ammonia Saturators were col lected in a vessel which had previously contained Ammonia Solution and which had not been washed; the Ammonia remaining in the beaker would neutralize a portion of the Sulphuric Acid Solution in addition to that already fixed by the Ammonia of the gas which had passed through the saturators, so that in calculating the quantity of Ammonia in 100 cubic feet the result would show just ten times the amout of Ammonia (carelessly left in the burette,) above the trae quantity.
4. Great care should be used in all the operations as errors will be greatly magnified, sometimes as much as twenty times.
5. Always "measure and make up solutions at the standard temperatuue \(62^{\circ}\) Fahr.
6. Take particular care to keep all chemicals and solutious in cool place, using especial caution with the Ammonia Solutions they may become weakened by evaporation.

\section*{APPENDIX:-}

Rule for cor- The table for the correction of the volume of Gas at different rection of temperatures and under different atmostpheric pressures must be volume of. gas used to correct the Gas rate in the photometrical experiments.

\footnotetext{
Rule.-In the column under the observed temperature and opposite the barometar reading will be found the tabular number for correction: Multiply the observed gas-rate by the tabular number to get the corrected gas-rate-
}
SOHEDULE" "A".


The Table shows the Per-centage of Increase of the Volume of Gas above it Volume at the Temperature of \(31 \cdot 40^{\circ}\) of Fahrenheit.
\begin{tabular}{|c|c|c|c|c|c|}
\hline \[
\begin{aligned}
& \text { Temperature } \\
& \text { in } \\
& \text { Fahrenheit's } \\
& \text { Scale. }
\end{aligned}
\] & Per-centage of Dilatation. & \[
\begin{aligned}
& \text { Temperature } \\
& \text { in } \\
& \text { Fabrenheit's } \\
& \text { Scale. }
\end{aligned}
\] & Per-centage of Dilatation. & \[
\begin{aligned}
& \text { Temperature } \\
& \text { in } \\
& \text { Farenheit's } \\
& \text { Scale. }
\end{aligned}
\] & \[
\begin{aligned}
& \text { Per-centage } \\
& \text { of of } \\
& \text { Dilatatiog }
\end{aligned}
\] \\
\hline \(31 \cdot 40\) & 0 & \(54 \cdot 33\) & \(5 \frac{1}{2}\) & \(74 \cdot 30\) & 11 \\
\hline \(33 \cdot 54\) & \(\frac{1}{2}\) & 56.24 & 6 & 75.94 & 113 \\
\hline \(35 \cdot 70\) & 1 & \(58 \cdot 12\) & \(6 \frac{1}{2}\) & \(77 \cdot 23\) & 12 \\
\hline \(37 \cdot 84\) & \(1 \frac{1}{2}\) & 60.02 & 7 & 78.81 & \(12 \frac{1}{4}\) \\
\hline \(39 \cdot 91\) & 2 & 62.00 & \(7 \frac{1}{2}\) & \(80 \cdot 40\) & 13 \\
\hline 42.05 & \(2 \frac{1}{2}\) & \(63 \cdot 77\) & 8 & 81.94 & \(18 \frac{1}{3}\) \\
\hline \(44 \cdot 17\) & 3 & \(65 \cdot 63\) & \(8 \frac{1}{2}\) & \(83 \cdot 44\) & 14 \\
\hline \(46 \cdot 22\) & \(3 \frac{1}{2}\) & \(67 \cdot 43\) & 9 & \(84 \cdot 88\) & \(14 \frac{1}{1}\) \\
\hline \(48 \cdot 25\) & 4 & \(69 \cdot 18\) & \(9 \frac{1}{2}\) & 86.39 & 15 \\
\hline 50.32 & \(4 \frac{1}{2}\) & 70.90 & 10 & 87.83 & \(15 \frac{1}{3}\) \\
\hline 52.36 & 5 & 72.60 & 101 & \(89 \cdot 20\) & 16 \\
\hline
\end{tabular}


Scheddle F.
P. 14 a.

AMMONIA TEST.

> Station-Toronto,
> Date-July 31, 1876.

Date.
Juてy 28, July ®9,

Thermometer. 72
76

Barometer.
29.5
29.7

Acid Solution used, 50 septems. Gas Consumed, 9.91 cubic feet.

Liquid obtained, \(\quad\) oO ozs. Liquid in Sample, \(\quad 10\) ozs. No. of Sample, 1
How disposed of
Signed \(\qquad\)

Scheddle G.
P. 14 b.

SULPHUR TEST.
Station-Toronto,
Date-July 31, 1876.
Date.
.July 28,
Thermometer.

Julu 29,
72
Barometer. 29.5 29.7

Gas Consumed, 9.91 cubic feet.
Liquid obtained, \(\mathscr{2 O}\) ozs.
Liquid in \({ }_{\mathrm{a}}\) Sample, 10 ozs.
No. of Sample, \(\quad 1\)
How disposed of \(\qquad\)
Signed \(\qquad\)

Samples of Adhesive Labels:
\begin{tabular}{|c|}
\hline \begin{tabular}{l}
p.l. AMMONIA TEST. \\
Volumetric Analysis. \\
Standard ETIMPHURIC ACID Solution. \\
10 Septems \(=\) Ono Grain NH.
\end{tabular} \\
\hline \begin{tabular}{l}
p. 2. \\
A M M O \(\qquad\) TEST. Volumetric Solution. Standard AMMINIA Solution. 100 Septems contain One Grain \(\mathrm{NH}_{3}\).
\end{tabular} \\
\hline \begin{tabular}{l}
p. 3. \\
AMMONIATEST. Volumetric Solution. \\
No. 1 OXAEMF AGID. \\
20 Septems = One Grain NH3.
\end{tabular} \\
\hline \begin{tabular}{l}
p. 3. \\
AMMONIA TEST. Volumetric Solution. No. 2 OXALIC ACMD. 20 Septems = One Grain \(\mathrm{NH}_{3}\).
\end{tabular} \\
\hline \begin{tabular}{l}
p. 4. \\
AMMONIATEST. \\
Volumetric Solution. \\
Stock AMIMOMIA Solution. \\
60 Septems contain Ona Grain \(\mathrm{NH}_{3}\).
\end{tabular} \\
\hline \begin{tabular}{l}
p. ©. AMMONIA TEST. \\
Volumetric Solution. \\
Stock SULPHIURIC ACID Solution. \\
8.33 Septems One Grain \(\mathrm{NH}_{3}\).
\end{tabular} \\
\hline
\end{tabular}

\section*{AMMONIA TEST.}

VOLUMETRIC ANALYSIS.
Station-Toronto, Aug. 2, 1876.

\begin{tabular}{|c|c|c|}
\hline \[
\left.\begin{array}{ll}
\text { Gas Consumed } \\
\text { Culic feet, } & 9.5
\end{array}\right)
\] & \[
\begin{aligned}
& 3.00 \\
& 285
\end{aligned}
\] & \[
\left(\begin{array}{c}
.315 \times 10=3.15 \\
\text { Grains NH3 in } 100 \text { cubic } \\
\text { feet of Gas. }
\end{array}\right.
\] \\
\hline & \[
\begin{array}{r}
150 \\
95
\end{array}
\] & \\
\hline & \[
\begin{aligned}
& 550 \\
& 475
\end{aligned}
\] & \\
\hline & 75 & \\
\hline
\end{tabular}

40 Victoria.



Sulphur in 100 Cubic Feet of Gas \(=20.2 .3\) grains.
Signed.

\section*{SCHEDULE J.}

TABLE to facilitate the Correction of the Volume of Gas at different Temperatures and under different Atmospheric Pressures.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline BAR & \({ }_{4}^{\text {TH }}\) & 420 & \(44^{\circ}\) & \(46^{\circ}\) & \(48^{\circ}\) & \(50^{\circ}\) & \(5{ }^{\circ}\) & \(54^{\circ}\) & \(56{ }^{\circ}\) & \(58^{\circ}\) & \(60^{\circ}\) & \(62^{\circ}\) & \(64^{\circ}\) & \(66^{\circ}\) & \(68^{\circ}\) & \({ }^{170}\) & \(72^{\circ}\) & \(74^{\circ}\) & \(76^{\circ}\) & \(78^{\circ}\) & 80 \({ }^{\circ}\) & \(\mathbf{8 2}^{\circ}\) \\
\hline & \(\cdot 971\) & \(\cdot 967\) & & & & & & & & & 33 & & & & 919 & \(\cdot 915\) & & 7 & 904 & & \(\cdot 897\) & 893 \\
\hline 281 & . 974 & \(\cdot 970\) & -967 & \(\cdot 963\) & . 959 & \(\cdot 955\) & \(\cdot 951\) & \(\cdot 948\) & \(\cdot 945\) & 41 & \(\cdot 937\) & 933 & . 929 & \(\cdot 926\) & 922 & . 919 & . 914 & . 911 & \(\cdot 907\) & . 904 & \(\cdot 900\) & 896 \\
\hline & . 978 & \(\cdot 973\) & . 970 & \(\cdot 968\) & .963 & .959 & \(\cdot 955\) & \(\cdot 951\) & \(\cdot 947\) & \(\cdot 944\) & \(\cdot 940\) & 936 & . 933 & \(\cdot 929\) & \(\cdot 925\) & . 92 & \(\cdot 917\) & \(\cdot 91\) & 91 & . 90 & .903 & 899 \\
\hline & \(\cdot 982\) & \(\cdot 977\) & 74 & \(\cdot 970\) & \(\cdot 966\) & . 963 & . 958 & . 955 & 951 & \(\cdot 947\) & 943 & \(\cdot 9,40\) & . 936 & . 932 & . 929 & 92 & . 921 & \(\cdot 917\) & . 914 & \(\cdot 911\) & 900 & 20 \\
\hline & . 985 & \(\cdot 980\) & \(\cdot 978\) & -973 & .970 & \(\cdot 966\) & \(\cdot 962\) & 58 & \(\cdot 954\) & \(\cdot 951\) & \(\cdot 947\) & 943 & \(\cdot 939\) & \(\cdot 936\) & . 932 & . 928 & . 92 & . 92 & \(\cdot 917\) & . 914 & \(\cdot 910\) & -905 \\
\hline & \(\cdot 988\) & . 984 & . 980 & \(\cdot 978\) & \(\cdot 973\) & \(\cdot 970\) & \(\cdot 965\) & . 961 & . 958 & \(\cdot 954\) & \(\cdot 950\) & \(\cdot 946\) & 943 & .939 & \(\cdot 935\) & \(\cdot 932\) & \(\cdot 927\) & -923 & . 92 & \(\cdot 917\) & 91 & \(\cdot 909\) \\
\hline & -992 & . 987 & \(\cdot 984\) & \(\cdot 980\) & . 976 & \(\cdot 973\) & \(\cdot 969\) & . 965 & 961 & \(\cdot 957\) & \(\cdot 953\) & 950 & \(\cdot 946\) & 942 & 939 & . 935 & .93 & . 927 & . 923 & 91 & . 91 & 912 \\
\hline & . 995 & . 991 & . 98 & . 983 & 88 & \(\cdot 976\) & \(\cdot 972\) & . 968 & -964 & . 961 & \(\cdot 957\) & .953 & \(\cdot 949\) & . 945 & \(\cdot 94\) & . 938 & -934 & \(\cdot 930\) & \(\cdot 92\) & . 92 & . 91 & \(\cdot 915\) \\
\hline & \(\cdot 998\) & . 995 & \(\cdot 991\) & \(\cdot 987\) & . 983 & . 98 & \(\cdot 976\) & \(\cdot 971\) & -968 & 964 & -960 & 95 & -95 & . 94 & \(\cdot 94\) & . 941 & \(\cdot 937\) & . 934 & 92 & . 92 & \(\cdot 922\) & \(\cdot 918\) \\
\hline & 1.002 & . 998 & . 994 & -991 & 87 & \(\cdot 983\) & \(\cdot 979\) & 75 & \(\cdot 971\) & 968 & -963 & \(\cdot 960\) & -956 & \(\cdot 952\) & \(\cdot 948\) & \(\cdot 94\) & \(\cdot 940\) & -937 & -933 & -92 & . 92 & \(\cdot 921\) \\
\hline & 1.006 & 1.001 & \(\cdot 998\) & \(\cdot 99\) & . 990 & \(\cdot 986\) & -982 & \(\cdot 978\) & 97 & \(\cdot 971\) & -967 & \(\cdot 963\) & 959 & . 955 & \(\cdot 952\) & \(\cdot 948\) & \(\cdot 94\) & . 940 & -936 & . 33 & . 92 & \(\cdot 925\) \\
\hline & 1.009 & 1.0 & \(1 \cdot 001\) & . 99 & .993 & \(\cdot 989\) & . 985 & . 98 & . 97 & 974 & \(\cdot 970\) & \(\cdot 966\) & . 962 & \(\cdot 959\) & \(\cdot 955\) & . 951 & -947 & -943 & -939 & -93 & -932 & . 928 \\
\hline & 1.012 & 1.008 & 1.004 & 1.001 & 997 & \(\cdot 993\) & -989 & \(\cdot 985\) & \(\cdot 981\) & \(\cdot 977\) & \(\cdot 973\) & \(\cdot 969\) & \(\cdot 966\) & . 962 & \(\cdot 9\) & 95 & . 950 & \(\cdot 94\) & . 942 & \(\cdot 938\) & .93 & . 932 \\
\hline & 1.016 & 1.0 & 1.0 & 1.00 & 1.000 & -996 & -992 & . 988 & 984 & . 98 & \(\cdot 97\) & \(\cdot 973\) & 969 & . 96 & . 961 & . 957 & \(\cdot 953\) & \(\cdot 950\) & \(\cdot 946\) & \(\cdot 9\) & \(\cdot 938\) & . 935 \\
\hline & 1.019 & 1.015 & \(1 \cdot 01\) & 1.00 & \(1.00 \pm\) & \(1 \cdot 000\) & \(\cdot 996\) & .992 & 988 & . 984 & . 980 & 976 & -972 & \(\cdot 969\) & . 965 & -961 & \(\cdot 956\) & -95 & \(\cdot 949\) & . 945 & . 941 & 38 \\
\hline & 1.023 & 1.018 & 1.014 & 1.011 & 1.007 & 1.004 & \(1 \cdot 000\) & 995 & 991 & . 98 & . 983 & 979 & .97 & . 97 & . 96 & \(\cdot 96\) & 960 & \(\cdot 95\) & \(\cdot 95\) & -948 & \(\cdot 94\) & \(\cdot 941\) \\
\hline & \(1 \cdot 026\) & 1. & 1.0 & 1.01 & 10 & 1.006 & 1.002 & . 998 & \(\cdot 994\) & . 991 & . 987 & . 982 & \(\cdot 979\) & \(\cdot 975\) & . 971 & -967 & . 963 & -959 & -955 & \(\cdot 952\) & \(\cdot 9\) & . 945 \\
\hline \(29 \cdot 7\) & 1.030 & 1.025 & 1.021 & 1.018 & 1.014 & 1.010 & 1.006 & 1.002 & . 997 & -994 & -990 & 98 & 982 & \(\cdot 978\) & . 974 & 970 & . 96 & . 96 & . 95 & \(\cdot 95\) & \(\cdot 951\) & \(\cdot 948\) \\
\hline & 1.03 & 1.02 & 1.0 & 1.02 & 1.017 & 1.013 & 1.0 & 1 & 1.001 & 99 & -993 & . 989 & \(\cdot 985\) & '981 & . 977 & \(\cdot 974\) & \(\cdot 970\) & \(\cdot 966\) & -962 & \(\cdot 95\) & 95 & \(\cdot 951\) \\
\hline & 1.037 & 1.032 & 1.028 & 1.02 & 1.0 & 1.0 & 1.013 & 1.009 & 1. & 1.001 & -99 & . 992 & . 989 & . 985 & 981 & \(\cdot 977\) & \(\cdot 973\) & . 96 & \(\cdot 965\) & :961 & \(\cdot 95\) & \(\cdot 954\) \\
\hline 30. & 104 & 1. & 1.03 & 1.02 & 1.024 & 1.020 & 1.016 & 1.012 & 1.008 & 1.004 & 1.000 & 996 & 99 & . 98 & . 98 & . 980 & \(\cdot 976\) & \(\cdot 97\) & . 96 & \(\cdot 96\) & \(\cdot 96\) & \(\cdot 957\) \\
\hline 30.1 & 1.043 & 1.0 & 1.035 & 1.032 & 1.028 & 1.0 & 1.019 & 1.015 & 1.011 & 1.007 & 1.004 & . 999 & . 995 & . 991 & . 987 & . 983 & . 979 & \(\cdot 975\) & . 972 & \(\cdot 968\) & . 964 & . 960 \\
\hline  & 1.047 & 1.04 & 1.03 & 1.03 & 1.031 & 1.027 & 1.023 & 1.019 & 1.015 & 1.011 & 1.007 & 1.003 & . 998 & -994 & 99 & 98 & -983 & \(\cdot 979\) & \(\cdot 97\) & \(\cdot 971\) & -967 & . 963 \\
\hline & 1.051 & 1.04 & 1.043 & 1.039 & 1.034 & \(1 \cdot\) & 1. & 1.022 & 1.018 & 1.014 & 1.010 & 1. & 1.002 & . 998 & . 994 & . 990 & \(\cdot 986\) & \(\cdot 982\) & -978 & \(\cdot 974\) & \(\cdot 970\) & . 966 \\
\hline 30.4 & 1.054 & 1.050 & \(1.0 \pm\) & 1.04 & 1.038 & 1.034 & \(1 \cdot 0\) & 1.020 & 1.021 & 1.017 & 1.01 & 1.009 & 1.005 & 1.001 & . 997 & 993 & 989 & . 98 & 98 & . 97 & . 97 & 969 \\
\hline \(30 \cdot 5\) & 1.058 & 1.05 & 1.0 & 1.0 & 1.041 & 1. & 1.033 & 1.029 & 1.025 & 1.021 & 1. & 1.012 & 1.008 & 1.0 & \(1 \cdot 000\) & \(\cdot 997\) & . 99 & \(\cdot 989\) & \(\cdot 98\) & \(\cdot 980\) & . 97 & \(\cdot 973\) \\
\hline 33.6 & 1.061 & 1.056 & 1.05 & 1.049 & 1.045 & 1.040 & 1. & 1.03 & 1.028 & \(1 \cdot 0 \geq 4\) & 1.020 & 1.016 & 1.012 & \(1 \cdot 008\) & 1.004 & 1.000 & \(\cdot 99\) & -992 & . 98 & . 984 & . 980 & -976 \\
\hline 30.7 & \(1.06+\) & 1.06 & 1.0 & 1.0 & 1.04 & 1.044 & 1040 & 1036 & 1.03 & 1.0 & 1.023 & 1.019 & 1.015 & 1.011 & 1.00 & 1.003 & -999 & -995 & .991 & .98 & . 983 & . 979 \\
\hline \(\mathbf{3 0} 5\) & 1.068 & 1.06 & 1.0 & \(1 \cdot 056\) & 1.051 & 1.047 & 1.043 & 1.039 & 1.035 & 1.031 & 1.027 & 1.022 & 1.018 & 1.014 & 1.010 & 1.006 & 1.002 & 99 & \(\cdot 994\) & . 990 & \(\cdot 986\) & -982 \\
\hline \(\mathbf{3 0} 9\) & 1.072 & 1.067 & 1.063 & 1.059 & \(1 \cdot 055\) & 1.051 & 1.046 & 1.043 & 1.038 & 1.034 & 1.030 & 1.026 & 1.022 & 1.017 & 1.014 & 1.010 & 1.006 & 1.002 & \(\cdot 997\) & -993 & \(\cdot 990\) & . 985 \\
\hline 81.0 & 1.075 & 1.07 & 1.067 & 1.063 & 1.058 & 1.054 & 1.051 & \(1.0 \pm 6\) & 1.042 & 1.037 & 1.033 & 1.029 & 1.0 & 1.021 & 1.017 & 1.0 & 9 & \(1 \cdot 005\) & 1.000 & .996 & . 993 & 89 \\
\hline
\end{tabular}

RuLE.-Multiply the observed volume by the Tabular Number which will be found in the column under the temperature and opposite the barometer reading

Errata.-Inland Revenue Report, 1876.-Supplement No. 2.-Continued.


Inland Reyenue Report, 1876.-Supplement No. II.


\section*{REPORT}

\author{
ON
}

\title{
ADULIERATION OF FOOD,
}

\author{
bence \\ SUPPLEMENTNo. III
}

\author{
TO THE REPORT
}

OF THI
DEIPARTMENT OF INLAND REVENUE,
\[
1876 .
\]
frinted by order of farliament.

O.TTAWA:
printed by maclean roger a, Co., wellington street.

\section*{ADULTERATION OF FOOD.}

\author{
COMMISSIONERS' REPORT.
}

\section*{CONTMNTS.}
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§ 6. Summary Statement of results of analysis ..... vi.
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\section*{ADULTERATION OF FOOD.}

\section*{To the Honourable \\ The Minister of Inland Revenue.}

Sir,-Herewith I have the honour to submit the reports of the Analysts appointed under the provisions of the Act 37 Vic., cap. 8, together with tabulated statements prepared in this Department of the results of the analysis of the varions samples submitted to, and reported on by them.
1. The Act above cited came into operation on the 1st of January, Act came into 1875, but the Order in Council making the regulations necessary for operation. giving effect to the law were not passed until March, 1876. The under-mentioned appointments have been made:-
R. G. Fraser, Halifax, June 14th, 1875.

Dr. J. Baker Edwards, Montreal, July 1st, 1875.
Appoint-
Dr. W. Hodgson Ellis, Toronto, May 15th, 1876.
Professor Larue, Quebec, June 6th, 1876.
2. Although Mr. Fraser, of Halifax, was the first to receive his Expla:ation appointment, and although samples of food were ordered to be sub- as to delays mitted to him as early as 14 th July, 1876, I am unable to include from IIalifax. in this report any results arrived at by that gentleman; I refer to this circumstance in order that, in justice to Mr. Fraser, I may have the opportunity for explaining the cause of the delay.
3. Instructions to take the samples referred to were sent to the late Collector Tupper, who reported that he called on Mr. Fraser on one or two occasions without having been able to see him. Mr. Tupper was drowned shortly afterwards, and the acting Collector does not appear to have had any knowledge of the matter, and it was not until November that this Department became aware of the cause to which Mr. Fraser's apparent delay in making his reports was due.
4. Further instructions were then forwarded both to the acting District Inspector and to the, acting Collector, as will be seen on reference to the memorandum on page 30 of the Appendices. But Mr. Fraser's report on the samples thus directed to be taken had not been received until after the close of the half year to which this report relates.

Dates at which samples were ordered to be taken.

Summary statement of results of sanalysis.
5. In Appendix III (p. 30) will be found a memorandum showing the dates at which instructions were given to the officers selected for this service to obtain and submit samples of various articles to the analysts. In communicating the instructions referred to, the respective officers were directed to consult the analysts as to the time at which it would be convenient for them to receive the samples, and generally to co-operate with them in carrying out this part of their duty.
6. The following statement shows that, of the whole number of samples reported on up to the 31st December, 1876, somewhat more than fifty-one and a half per cent. were adulterated. It is obvious, therefore, that if the same ratio continues to prevail some preventive measures more effective than have yet been attempted, will become necessary in the public interest.
\begin{tabular}{|c|c|c|c|}
\hline Name of Article. & Total Number Analyzed. & Number of Sumples Adulterated. & Number of Samples Unadulterated. \\
\hline Allspice ............................ & 5 & 2 & 3 \\
\hline Bitters (Quinine Wine) ......... & 5 & 4 & 1 \\
\hline Clores.......... .................... & 3 & 3 & - \\
\hline Cinnamon.......... ................ & 5 & 5 & ..................... \\
\hline Cocoa and Chocolate........... & 2 & ................... & 2 \\
\hline Coffee ............................... & 10 & 9 & 1 \\
\hline Ginger............................... & 6 & 6 & .............. ....... \\
\hline Mustard.............................. & 6 & 6 & . ......... \\
\hline Pepper.. ...... ........ ............. & 19 & 17 & 2 \\
\hline Potted Meats........ .............. & 3 & ............. & 3 \\
\hline Spirits.............................. & 1 & ......... ........ & 1 \\
\hline Milk & 58 & 34 & 24 \\
\hline Sugar..... ............ ............... & 15 & 3 & 12 \\
\hline Sweets................ ............. & 20 & ................... & 20 \\
\hline Tea ..... & 20 & 4 & 16 \\
\hline Unenumerated Articles ........ & 2 & & 2 \\
\hline Totals... .. ...... ........ & 180 & 93 & 87 \\
\hline
\end{tabular}
7. The most importantadulteration, and probably the most difficult Adulteration to deal with, is that of milk. Of this article fifty-eight analyses have been reported, and in thirty-four cases the samples were found to have been adulterated. It may have been doubtful whether the adulteration was in every case such as would have justified a prose \({ }^{-}\) cution under the existing state of the law, for as the analysts' reports will show, it is sometimes difficult to determine whether the sophistication is the result of adding water or of abstracting cream, and in order to remove this difficulty, as well as similar difficulties in relation to other articles, it is submitted that a slight amendment of the law is necessary.
8. But there is another difficulty in dealing with this question, and that is the want of a standard. The same difficulty has been met with in working the English law, and it is alleged that the analysts, in making a standard of quality too high, have in many cases caused some injustice to be done.
9. On this subject, the Committees appointed by the Imperial Parliament in 1874, to inquire into the operation of the Adulteration of Food Act of 1872 , reported as follows :-
"Too high and rigid a standard has been fixed by some analysts,

Extract from Report of Committee of Imperial
House of
Commons and no sufficient allowances have been made for the natura! variations in milk. Ten per cent. of milk solids may be more difficult to obtain under certain unfavourable conditions than 12 or 14 under a more generous diet, a warmer atmosphere and more comfortable lodging. Not only does the quality of milk vary with the tood, the breed of cattle, the time of year, and treatment of the animals, but the milk of the cow of the same breed will differ greatly from that of another managed under a precisely similar system; and further, the first and last pint of milk which a cow gives at the same milking will present all the difference between an extremely poor and an exceedingly rich milk. Allowances should therefore be made for these natural variations, which some purely scientific chemists seem to have occasionally overlooked.
"It has been argued that notwithstanding all these discrepancies, a certain per-centage of solids might be agreed upon, below which no milk should be considered pure. If a low standard were fixed there would be a great inducement for the vendors of really rich milk to abstract a portion of the cream without reducing the milk below the recognized standard, and, on the other hand, it might offer a premium upon the production of a naturally poor class of milk."
10. The English Act of 1875 leaves the responsibility of fixing the Responsibilistandard for milk on the analyst, and with the information as yet dyard of milk. available I apprehend that no other course can be prudently followed in Canada.
11. It will also be observed that the adulteration of condiments and Adulteration of condiments spices, such as mustard, pepper, ginger, \&c., prevails to a very large extent. Of nineteen samples of pepper, only two were pure; of
mustard, not one was found to be pure. The same may be said of ground ginger, ground cloves and ground cinnamon.

Ooffee.

Tea.
12. Ground coffee is also shown to be greatly adulterated. Of ten samples analyzed, only one was pure.
13. Of the twenty samples of tea, adulteration was only detected in four, but these adulterations are worthy of notice, as pointing to the probability of our tea supplies being affected in quality by the exportation from England of adulterated teas which, under the English laws of 1875, are excluded from the English market from and after the 1st January, 1876; the Customs authorities having the power to refuse entry to teas which are found by analysis to have been adulterated.

Probability of adulterated tea entering Canada.
14. By the operation of this restriction, a vast quantity of tea has been disqualified for entry for consumption, and will probably be cleared outwards for exportation, and it is not unreasonable to suppose that a part of it will find its way into Canada both by way of New York and directly.
Quinine wine.
15. The report by Dr. Edwards of his analysis of the so-called Quinine Wine, is worthy of notice. It appears that of five samples submitted to him, only one was found to be in accordance with the official formulæ, the others being in fact potable stimulants, containing alcohol in as large a proportion as is usually found in port or sherry wines, and greatly in excess of what is found in malt liquors.

No prosecutions yet instituted.

\footnotetext{
Abstention from prosecuting will destroy the revenue.
}
16. The Act has been in practical operation too short a time and in to few places to justify me in venturing on any decided expression of opinion as to its value. As yet no prosecutions have been instituted, but it is not unreasonable to suppose that the knowledge that analysts have been appointed, and that samples have been submitted to them will have had its effect in the places where such appointments have been made. The publication of the names of the parties whose goods have been subjected to examination, together with the results arrived at, will, without doubt, exercise a powerful influence, perhaps a greater influence than prosecutions It is, however, a matter for consideration as to whether the system of abstention from prosecuting offenders against the law, which has so far prevailed, shall be continued in the future. Probably prosecution in the most flagrant cases may be found necessary for the suppression of gross adulteration.
17. In the event of its being decided that no prosecutions shall bo instituted, the Government will fail to obtain any revenue from the fees which parties convicted would have to pay, and the public at

\section*{40 Victoria}
large would in that case have to bear the whole cost of administering the law-a cost which will increase as the places at which it is put in operation are multiplied.
18. If further experience of the law should tend to enhance its importance, it will become necessary to provide for its operation in all the principal cities and towns, and in so doing to arrange for analyzing of samples taken in the smaller places. As the law now stands, it appears that the analyst can only legally act for the Inland Revenue Division for which he is appointel, but there does not appear to be any obstacle to the appointment of the same analyst for several divisions. This being the case, I submit that the Inland Revenne Divisions should be grouped together and so arranged as to Groupinginmake the services of the analysts that are or may be appointed \(\frac{\text { land Revenue }}{\text { Divisions. }}\) available over the largest possible area. This is necessary in order to keep down expenses, but still more so in view of the limited number of competent analysts who can be made available; for it is evident that in order to administer the law so as is command public respect, it is imperative that the examination of the samples submitted should not be intrusted to mere amateurs or incompetent persons.

Respectfully submitted,

\author{
A. BRUNEL, \\ Commissioner of Inland Revenue.
}

\section*{Department Inland Revenue,}

March 25th, 1877.

\author{
APPENDICES
}

TO

\section*{REPORT ON INSPECTION OF FOOD.}

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\section*{INSPECTION OF FOOD.}

\author{
——O-
}

\author{
APPENDIXI. \\ -0- \\ ORDER IN COUNCIL ESTABLISHING*REGULATIONS. Wednesday, 8th day of March, 1876.
}

0N the recommendation of the Honorable the Minister of Inland Revenue, and under the provisions of the 26 th section of the Act passed in the Session of the Parliament of Canada, held in the 37th year of Her Majesty's Reign, chaptered 8, and intituled: "An Act to prevent the adulteration of food," His Excellency, by and with the advice of the Queen's Privy Council for Canada, has been pleased to make the following regulations for carrying into effect the provisions of the said Act, that is to say :-

1st. That Analysts be appointed only at the Cities of Montreal, Quebec, Halifax, St. John and Toronto.

Analysts to be appointed at five places.

\section*{Remaneration.}
(a.) By a retaining fee of \(\$ 200\) per annum.
(b.) By an allowance for the first year of a sum not exceeding \(\$ 300\) for the apparatus and material used in the laboratory.
(c.) By an annual repayment of such expenses as are necessarily incurred in providing material for analysing samples submitted to them by authorized officers of this Department.
(d.) By an allowance of \(\$ 100\) towards the rent of the place in which the laboratory may be established.
(e.) By payments equal to the amount of fees payable in each case in accordance with the scale therein established untill the amount reaches \(\$ 2,000\).

3rd. That the following tariff of fees be authorized :-
For Gas Analysis for Sulphur, Ammonia and Sulphuretted Hydrogen. ..... 00
For Analysis of Milk, Bread, Butter and sweets ..... 500
For Analysis of Malt Liquors, Cider, Light Wines, Drugs, Alcoholic Liquors, Liqueurs and Condiments. ..... 800For Analysis of Tea, Tobacco, Cocoa andChocolate.......................................... 1000
For Analysis of unenumerated articles ..... 500

4th. That all fees collected under the abore tariff shall, when collected, be paid to the credit of the Consolidated Fund.

Instructions as to procedure.

5th. That the Analysts appointed shall be governed by the following regulations :-
(a.) On receipt of a sample from the revenue officer authorized, as provided in the Act above cited to take such samples, the Analyst shall open the sample and, in the presence of that officer shall carefully mix equally and divide it into two parcels-one of which he shall keep for analysis-the other he shall seal up with his own seal and deposit with Inland Revenue officer.
(b.) The Analyst shall reserve a portion of his own sample for future examination. But, if the substance be of such a nature as to undergo alteration by keeping a short time, such as milk, the first analysis shall be final and, in such case, no analysis shall be held valid unless report be sent in within twelve hours of the taking of the sample and, in such oase, duplicate samples shall be unnecessary.
(c.) That the Analyst shall impartially perform the duties of his office, and shall not give the result of his analysis or the naraes or addresses of parties whose sample may be submitted to him, to any one except when called upon to do so in his report to the Department or before a court of law in conformity with his duties under this Act.
(d.) The form of certificate given in such case shall be as in Schedule A.

\section*{SCHEDULE A.}
\begin{tabular}{|c|c|}
\hline & M. I. 187 \\
\hline \multirow[t]{9}{*}{Form of Report.} & \(\qquad\) , Public Analyst for Inland Revenue Divjsion of appointed under Inland Revenue Act of 1875, hereby \\
\hline & certify that I received from (1) , Inland Revenue officer for \\
\hline & District of , on the day of , 187, a sample sealed \\
\hline & according to Act. Seals unbroken bearing (2) \\
\hline & marks, that I opened such package in presence of (3) \\
\hline & an officer designated by the Department, and the sample then \\
\hline & (4) I then carefully mixed such sample equally and \\
\hline & divided it into two parcels, one of which I handed to said Inland \\
\hline & Revenue officer, the other I have submitted to analysis, and find (5) \\
\hline
\end{tabular}

I have further reserved a portion of the sample myself. As witness my hand.
(Signed) A. B.
Analyst.
(1) Here insert the name of the person submitting the sample for analysis.
(2) Here insert a description of the Seals, Marks, Numbers or other devices used for securing the vessel or package in which the article is contained.
(3) Here insert the name of some officer designated by the Department of Inland Revenue, fin whose presence the package was opened.
(4) Here insert the weight or measure of the sample, or when the article cannot be conveniently weighed or measured, this passage may be erased, or the blank left unfilled.
(5) Here the Analyst will ;insert the result of his analysis, and at his discretion his opinion as to whether the mixture (if any) was for the purpose of rendering the article potable or palatable, or of preserving it or of improving its appearance, or was unavoidable, and may state whether it is in excess of what is ordinary or otherwise, and whether the ingredients or materials mixed are or are not injurious to health. In case of a certificate regarding milk, butter, or any article liable to decomposition, the Analyst shall specially report whether any change had taken place in the constitution of the article that would interfere with the analysis.

\section*{W. A. HIMSWORTH}

Clerk, Privy Council.

\title{
APPENDIX No. ir.
}

\section*{INSPECTION OF FOOD.}
reports of analysts appointed under the agt 37 vic., dap. 8.

Report of Mr. Ellis.
Tomonto, 1st October, 1876.
To the Commissioner of Inland Revenue.
Sir,-In accordance with the provisions of the Inland Revenue Act of 1875, I beg to report as follows:-

Number of samples analyzed.

Up to this date I have received 39 samples of articles of food and drink, 38 of which I have analyzed. One sample of cough lozenges (Report No. 214) I did not analyze, because the quantity submitted was too small for a satisfactory determination of its constituents.

The samples may be divided into 5 classes:-
1. Sweets.
2. Drugs.
3. Spices.
4. Coffee and Chocolate.
5. Milk.

Aweetmeats. 1. Sweets.-Eleven Samples have been analyzed. Sugar may be said to form the basis of all these articles, but almost all give a blue color, with iodine, showing the presence of starch. Examined under the microscope, the starch was found in some samples to be that of Indian corn, added, no doubt, as corn starch; in others it was shown to be the starch of wheat flour. No substance like chalk or plaster of Paris entered into the composition of any of them. In examining any samples of sweetmeats the attention of the analyst is of course principally directed to the presence or absence of injurious coloring matters, such as arsenical or other poisonous mineral pigments and aniline colors. In no case were any of these objectionable matters detected in the samples analyzed.

Drugs. 2. Drugs.-Under the head of drugs certain medicated lozenges, samples of which were sent me for analysis, must be inciuded. These were :-

Tolu-lozenges, consisting of balsam of tolu, sugar, and gum arabic. Nitre-lozenges, composed of nitrate of potassium, sugar and starch.
Gelatine-lozenges, composed of sugar and gelatine; and
Ginger-lozenges, composed of ginger, sugar and gum arabic.
3. Spices.-The spices examined were ginger and pepper. Two Spices. samples of each were analyzed. One sample in each case was sold by the manufacturer as pure; the other was not sold as pure, but was warranted free from any injurious ingredient. The samples sold as pure were in both cases found to be genuine. The adulteration, in the other cases, was found to be wheat flour.
4. Coffee and Chocolate.-Two samples of ground coffee were Coffee and analyzed; one sold as pure, the other not. That sold as pure was chocolate. genuine; the other contained roasted wheat. One sample of chocolate was submitted to me. It consisted of cocoa mixed with flour, and colored with some ferruginous coloring matter, as venetian red.
5. Milk.-Twelve samples of milk have been analyzed. The Milk. samples were taken from the carts of the milkmen on the streets.

In the absence of any extensive series of reliable observations made in this country with a view to ascertain the normal composition of genuine milk, and establish a standard of normal milk, reliance had to be placed on what has been done elsewhere.

From the M. M. Henrie and Chevalier, the normal composition of Chevalier's cow's milk is as follows :--

Caseine.......... .................. \(4 \cdot 48\)
Fat............................................. 3-13
Sugar......... ....................... \(4 \cdot 77\)
Ash.................................... 0.60
Water................................. 87.02
\(100 \cdot 00\)
Total solids......................... 12.98
" Fat................ ........... 3.13
\(9 \cdot 85\)
The mean of 10 analyses by Poggiale is :-- \(\quad\) Poggiale's
\[
\text { Caseine..................... .......... } 3 \cdot 80
\]

\section*{experiments.}
Fat. ..... \(4 \cdot 38\)
Sugar. ..... \(5 \cdot 27\)
Ash ..... 0.27
Water ..... 86.28
\(100 \cdot 00\)
Total solids. ..... \(13 \cdot 72\)
" Fat ..... \(4 \cdot 38\)
Solids not fat ..... \(9 \cdot 34\)

Wanklyn states, as the results of his experiments, that town-fed Wanklyn's milk is richer than country milk, thus:-

> Country Milk. Town Milk.
\begin{tabular}{|c|c|c|}
\hline Water .................. & \[
\begin{aligned}
& \text { untry } M \\
& 87 \cdot 45
\end{aligned}
\] & \begin{tabular}{l}
own Milk \\
\(85 \cdot 96\)
\end{tabular} \\
\hline Fat...................... & \(3 \cdot 08\) & 4.00 \\
\hline Caseine. & \(4 \cdot 14\) & \(5 \cdot 01\) \\
\hline Sugar ................... & \(4 \cdot 62\) & 4.30 \\
\hline Ash & \(0 \cdot 71\) & 0.73 \\
\hline & \(100 \cdot 00\) & \(100 \cdot 00\) \\
\hline Total solids............ & 12.55 & 14.04 \\
\hline Fat. & 3.08 & 4.00 \\
\hline Solids not fat.......... 5 & \(9 \cdot 47\) & \(10 \cdot 04\) \\
\hline
\end{tabular}

The milk of the Alderney cow, popularly supposed to be exceptionallygrich, was found by Wanklyn to contain :-
Water ..... \(87 \cdot 34\)
Fat ..... \(3 \cdot 22\)
Caseine. ..... \(4 \cdot 61\)
Sugar ..... \(4 \cdot 13\)
Ash ..... 0.70Total solids........................ 12.55" Fat3.22
Solids not fat. ..... \(9 \cdot 33\)
McNamara's The average of 8 analyser by Mr. McNamara, of Calcatta, of the experiments. small and ill-nourished Bengali cow, is as follows:-
Water ..... 86.55
Fat ..... \(3 \cdot 42\)
Sugar ..... 4.07
Caseine ..... \(5 \cdot 19\)
Ash. ..... 0.77
\(100 \cdot 00\)

Total solids

Total solids ..... \(13 \cdot 45\)
" Fat ..... \(3 \cdot 24\)
Solids not fat. ..... \(10 \cdot 03\)
Hessal's

Hassal gives as the mean of all the reliable analysis he has metaxperiments. with, the average composition of cow's milk as follows:-

From these figures it appears that the milk of the cow has a tolerably constant composition, and that, although the food may vary, the percentage of solids not fat only varies within very narrow limits.

\footnotetext{
- It will be noticed that these figures do not make 100 , and from the figure given for the total solids, \(13 \cdot 17\), it is clear that there is an error of 1 in excess of the first|place of decimals in one of the constituents.
}

Muller and Eisenstuck made for the Royal Agricultural Society Muller and of Sweden a daily analysis of the milk of a herd of 15 cows Eisenstacks of different breeds during one year. They found that the total solids only four times fell below 12 per cent. Their results are as follows:-

Total Solids per cent.
\begin{tabular}{|c|c|}
\hline Maximum & 14.08 \\
\hline Minimum. & 11.50 \\
\hline Mean. & 12.80 \\
\hline
\end{tabular}

Wanklyn made 10 analyses during the year 1871, of milk from Further from various counties in England. He found the total solids as Wanklyn. follows:-
\begin{tabular}{|c|c|}
\hline & Total Solids per cent. \\
\hline Maximum & 14.34 \\
\hline Minimum. & 11.80 \\
\hline Mean. & 12.71 \\
\hline
\end{tabular}

From these experiments it'appears that the total solids of the Deductions milk from a herd of cows seldom falls below 115, and is generally from above over 12 per cent.

Wanklyn, from his experiments, and from those of Muller and Eisenstuck, concludes that 100 parts by weight, of normal milk, contain:-
\[
\begin{aligned}
& \text { Solids (dry at } 100 \text { per cent).. } \quad 12.5 \\
& \text { Water........................... } 87 \cdot 5 \\
& 100.0
\end{aligned}
\]

The 12.5 parts of solids consist of 9.3 "solids not fat" and 3.2 fat. He also concludes that the milk of a herd of cows in good condition a!ways contains more than 11.5 per cent. of solids, and that single cows almost invariably, if not always, yield milk containing more than 11.5 per cent. of solids. In dealing with milk supply on the large scale he treats all departure from this standard as sophistications.

Goppelsröder has however shown, in an elaborate investigation, Goppelsrothat the milk of a single cow may fall below this standard. He has ders inventio published four cases in which the total solids were respectively 10.69 , gations. \(11 \cdot 41,11 \cdot 43\) and \(9 \cdot 5 \pm\) per cent. And more recently Dr. Voelcker has shown that the milk of a herd of cows may depart considerably from the normal composition. He has published an analysis of a sample of country milk from cows kept on very good pasture land, in which the total solids were \(16 \cdot 10\) per cent., of which \(7 \cdot 62\) per cent. was fat. On the other hand he found that milk of a herd of cows fed in September upon scanty pasture gave the following:-
\begin{tabular}{|c|c|c|}
\hline & Morning's Milk. & Evening's Milk. \\
\hline Total solids. & .. 10.05 & \(9 \cdot 30\) \\
\hline Fat..... & ... 1.99 & \(1 \cdot 79\) \\
\hline Solids & ... 8.06 & 7.51 \\
\hline
\end{tabular}

When these cows were driven into stall and adequately fed with roots, hay and meal, the character of the milk at once improved, and it yielded \(12 \frac{1}{2}\) per cent. of solids, containing nearly 4 per cent. of fat.

Dr. Stevenson Dr. Stevenson Macadam has published the resulta of a large Macedam's inveatigations number of analyses of the milk supplied to Edinburgh. The sample in each case was taken by his assistant, in whose presence the cows were milked. In the milk from three dairies he found that the composition varied as follows:-

Total Solids Fat Solide not Fat.
\begin{tabular}{|c|c|c|c|}
\hline Highest. & 14.54 & \(3 \cdot 32\) & \(11 \cdot 23\) \\
\hline Lowest.. & 10.57 & 1.56 & \(8 \cdot 74\) \\
\hline Mean.. & 12.04 & 2.44 & \(9 \cdot 60\) \\
\hline
\end{tabular}

He also states that out of 66 samples of genuine milk taken from 46 cows, analyzed by him, only 11 came up to the high standard of \({ }^{-}\) 3.2 per cent. of fat, and 3 samples were deticient in the high standard of \(9 \cdot 3\), solids not fat.

Seven samples of country milk, analyzed by the same chemist, yielded the following resulte, only two of the samples coming up to the standard of 3.2 per cent. of fat, and three of them being deficient in total solids :-
\begin{tabular}{|c|c|c|c|}
\hline No. of Sample & Total Solids & Fat & Solids not Fat \\
\hline 1 & \(13 \cdot 17\) & \(2 \cdot 30\) & 9.87 \\
\hline 2 & \(11 \cdot 85\) & 222 & \(9 \cdot 63\) \\
\hline 3 & \(12 \cdot 96\) & \(2 \cdot 87\) & 10.09 \\
\hline 4 & \(12 \cdot 47\) & 2.59 & \(9 \cdot 88\) \\
\hline 5 & \(12 \cdot 25\) & 1.84 & \(10 \cdot 41\) \\
\hline 6 & \(12 \cdot 86\) & 2.87 & 9.99 \\
\hline 7 & 13.88 & \(4 \cdot 46\) & \(9 \cdot 42\) \\
\hline Highest... & 13.88 & \(4 \cdot 46\) & \(10 \cdot 41\) \\
\hline Lowest.... & \(11 \cdot 85\) & 1.86 & \(9 \cdot 42\) \\
\hline Mean....... & \(12 \cdot 67\) & 2.88 & \(9 \cdot 89\) \\
\hline
\end{tabular}

Dr. Qameron s
Dr. Cameron gives us the mean of 40 analyses of pure milk from:
experiments
in Dublin.
\[
\begin{aligned}
& \text { Water............................................ } 87.00 \\
& \text { Fat. . ......... .................. . ....................... } 4 \cdot 00 \\
& \text { Caseine................................................. } 4 \cdot 10 \\
& \text { Sugar...................... .......................... } 4 \cdot 28 \\
& \text { Ash................................................... } 0 \cdot 62
\end{aligned}
\]
\(100 \cdot 00\)
Total Solids. . . . . . . . . . . ...................... . 13.00 .
Fat. . .................................................. \(4 \cdot 00\)

Solids not Fat.................................. .. \(9 \cdot 00\).

Dr. Girdwood has published an analysis of the milk supplied to Dr. Girdthe city of Montreal, from a dairy of 150 cows. His results are :wood's analyses of milk in
\begin{tabular}{|c|c|}
\hline Water. & \(84 \cdot 80\) \\
\hline Fat & \(3 \cdot 16\) \\
\hline Caseine, & \(11 \cdot 40\) \\
\hline Sugar, & 40 \\
\hline Ash & \(0 \cdot 64\) \\
\hline & \(100 \cdot 00\) \\
\hline Total solids.. & \(15 \cdot 20\) \\
\hline Fat....... & 3•16 \\
\hline Solids not fat & 12.04 \\
\hline
\end{tabular}

I have made, during the past summer, a few analyses of genuine milk, and my results, although not based on the examination of a sufficient number of samples to justify positive conclusions, nevertheless, so far as they go bear out the foregoing statements. They are as follows :-
\begin{tabular}{llcc} 
& & Total Solids. & Fat. \\
& Solids not Fat. \\
Highest. ........... & \(13 \cdot 84\) & \(3 \cdot 39\) & \(11 \cdot 11\) \\
Lowest............. & \(12 \cdot 26\) & \(2 \cdot 63\) & \(9 \cdot 06\) \\
Mean................. & \(12 \cdot 78\) & \(3 \cdot 03\) & \(9 \cdot 55\)
\end{tabular}

Professor Croft has kindly favoured me with some analyses of Professor genuine milk recently made by him. His results agree pretty Croft's closely with my own.

It may be interesting here to compare the quality of the milk supplied to several cities in Great Britain and Canada. The following table affords the means of doing this:
\begin{tabular}{llccc} 
Town. & \multicolumn{1}{c}{ Authority. } & Total Solids. & Fat. & Solids not Fat. \\
London. & Mr. Wanklyn. & \(12 \cdot 50\) & \(3 \cdot 20\) & 9.30 \\
Fdinburgh. & Dr. Macadam. & \(12 \cdot 0.4\) & \(2 \cdot 44\) & \(9 \cdot 60\) \\
Dublin. & Dr. Cameron. & \(13 \cdot 00\) & \(4 \cdot 00\) & 9.00 \\
Montreal. & Dr. Girdwood. & \(15 \cdot 20\) & \(3 \cdot 16\) & \(12 \cdot 04\) \\
Toronto. & Dr. Ellis. & 12.78 & \(3 \cdot 03\) & 9.55
\end{tabular}

The Society of Public Analysts of Great Britain has fixed the Investigations limits of genuine milk at 9 per cent of solids not fat, and 2.5 per cent by Society of of fat. If the solids not fat fall below 9 per cent, the milk is regarded as watered. If the fat falls below \(2 \cdot 5\), it is considered that cream Pablic Analysts of Great Britain. has been removed by skimming.
From what has been said it is quite clear that genuine milk may fall a little below this standard; but, on the other hand; it ought to be very much above it ; and, in case any given sample does fall below it, unless some special reason is assigned for this deficiency, the milk must be looked upon as sophisticated.

The great variability of the per centage of fat has, I think, been very clearly established; but, on the other hand, all these results tend to confirm the constancy within comparatively narrow limits of the solids not fat. This quantity then, i.e., the per centage of the solids not fat, should, I conceive, be taken as representing the quality of the milk with regard to the question of adulteration, and certainly 9 per cent., the limit of the Society of Public Analysts, cannot be held to be too high in questions relating to wilk supply.

\section*{Disputed cases.}

Nature of adulterations used.

Methods of salysis.

In any disputed case there is an easy method of checking our results, viz: by an analysis of a fair sample of the milk of the same cow taken in the presence of the analyst or inspector as soon as possible after the seizure of the suspected milk. And I would suggest the propriety of a regulation giving to any dealer from whom a sample of milk is procured for analysis under the Act, the right to demand that this should be done within a reasonable time after the first sample is taken. The expenses of procuring and analyzing this sample should be borne by the dealer. If this second analysis shows the milk yielded by his cows to be of standard quality, the conclusion follows that the first sample, if it has been found below the standard, is sophisticated. If, however, the authenticated sample also comes below the standard, then it will be probable that the first sample was genuine, and the expenses of the second analysis might be refunded to the dealer. Cases like this, however, would be extremely rare, and it is unlikely that dealers would often exercise this right, as, in the case of watered milk, it would only tend to confirm the evidence against them.

It has often been asserted that a great variety of substances are added to milk, such as chalk, calves' brains, \&c., but all analysts agree that such adulterations are never met with at the present day. The question of the sophistication of milk resolves itself into watering and skimming. In the analysis of milk, with a view to ascertain its purity, therefore, there are three points to be attended to:

1st. The loss on drying, which corresponds to the water, while the residue gives the total solids;

2nd. The fat, and
3rd. The difference between the total quantity of solids and the fat-i.e., " the solids, not fat."

In addition to these, the quantity of ash, that is of inorganic constituents, is valuable as an indication of watering or the reverse.

The method adopted in the analysis of the following 12 samples of milk taken by the inspectors from the carts of dealers in the streets of Toronto is that of Mr. Wanklyn.

Five cubic centimetres of the milk were evaporated in a small platinum dish on the water bath at \(100^{\circ} \mathrm{C}\) for three hours. The residue represented the total solids. This residue was then incinerated and the weight of ash taken. To estimate the fat, 10 cubic centimetres of the milk were evaporated on the water bath for one hour with occasional stirring, boiled with a little alcohol to disintegrate the cheesy residue, the alcohol driven off by evaporation, and the residue boiled with ether, repeated twice. The residue was once more boiled with alcohol, the alcohol again driven off, and the residue again treated with ether. This process was found to effect the complete separation of the fat. The ethereal solution was allowed to evaporate to dryness in a platinum dish. The residue was the fat in ten cubic centimetres of the milk. The quantity of "solids not fat" is found by subtracting the weigni of the fat from the weight of the total solids in a given quantity of the milk.

\footnotetext{
List of dealers
from whom gamples were obtained.

The following is a list of the dealers from whom the samples were obtained. The numbers correspond to those of the tables.
1. T. Adams, Kingston Road.
2. T. Burton, Carlton Street.
3. G. Henderson, Dover Court Road.
4. E. P. Riley, Major Street.
5. Toronto Dairy Company.
}
6. T. Preston, Don and Danforth Road.
7. Wm. Law, 203 Berkeley Street.
8. Thos. Williams, Don and Danforth Road.
9. Wm. Mathers, Roxburgh Dairy, Yorkville.
10. James Hughes, Jameson Avenue.
11. J. S. Dennison, Birchdale, Dover Court Dairy.
12. Thos. Lamb, corner Tecumseh and Garrison Sts.

The following is a tabular statement of the results of these 12 Resalta :analyses expressed in parts per cent. by weight:-
\begin{tabular}{crccc}
\begin{tabular}{c} 
No. of \\
Samples.
\end{tabular} & \begin{tabular}{c} 
Total \\
Solids.
\end{tabular} & Fat. & \begin{tabular}{c} 
Solids \\
not Fat.
\end{tabular} & Ash. \\
1 & 9.30 & 2.06 & 7.24 & 0.48 \\
2 & 11.63 & 1.65 & 9.98 & 0.59 \\
3 & 11.07 & 2.97 & 8.10 & 0.64 \\
4 & 11.32 & 2.48 & 8.34 & 0.57 \\
5 & 11.99 & 3.14 & 8.85 & 0.67 \\
6 & 11.38 & 2.61 & 8.77 & 0.52 \\
7 & 12.15 & 3.16 & 8.99 & 0.64 \\
8 & 12.71 & 2.25 & 10.46 & \(\ldots \ldots\). \\
9 & 9.41 & 1.84 & 7.57 & \(\ldots .\). \\
10 & 11.52 & 2.41 & 9.11 & 0.60 \\
11 & 9.22 & 1.83 & 7.39 & 0.37 \\
12 & 11.48 & 1.99 & 9.49 & 0.60
\end{tabular}

It will be seen by an inspection of the above table that, of the 12 samples analysed, only 5 came up to the Public Analyst's standard of 11.5 per cent. total solids, while only one, No. 8, comes up to Wanklyn's standard of 12.5 per cent. Four samples only, Nos. 3, 6 and 7 reach the Public Analyst's standard of 2.5 per cent. fat. Not one comes up to Wanklyn's standard of 3.2 per cent. Only four samples reach the standard of 9 per cent. of solids not fat (Nos. 2, 8, 10, 12). Only two, Nos. 10 and 12, reach Wanklyn's standard of \(9 \cdot 3\) per cent. solids not fat.

Taking 9 per cent. as the standard and calculating the amount of genuine milk in each sample below this standard by the formula percentage of genuine milk \(\frac{100 \times \text { solids not fat }}{9}\) we get the results expressed in the first column of the following table.
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{No.} & \multicolumn{2}{|l|}{Standard 9 per cent. total solids.} & \multicolumn{2}{|l|}{Standard 99.3 per cent total solids.} \\
\hline & Percentage of Genuine Milk. & Water added. & Genuine Milk. & Water added. \\
\hline 1 & \(80 \cdot 44\) & \(19 \cdot 56\) & 77.8 & \(22 \cdot 2\) \\
\hline 3 & \(90 \cdot 00\) & 10.00 & \(87 \cdot 0\) & \(13 \cdot 0\) \\
\hline 4 & 98.22 & \(1 \cdot 78\) & ...... & ...... \\
\hline 5 & 98.33 & \(1 \cdot 67\) & ...... & ...... \\
\hline 6 & \(97 \cdot 44\) & \(2 \cdot 56\) & .... & ..... \\
\hline 7 & 99.88 & \(0 \cdot 12\) & ...... & \\
\hline 9 & \(84 \cdot 11\) & 15.89 & \(81 \cdot 3\) & \(17 \cdot 7\) \\
\hline 11 & 82-11 & . \(17 \cdot 89\) & \(79 \cdot 4\) & \(20 \cdot 6\) \\
\hline
\end{tabular}

The second column contains the percentage of water added, obtained by subtracting the former numbers from 100.

It must be borne in mind, however, that 9 per cent. solids not fat is a low average, and would represent a poor milk. The milk to
be watered is as likely to be a good as an inferior article. Taking the four most flagrant cases from the former table, and calculating the percentages of genuine milk and water added by Wanklyn's standard of \(9 \cdot 3\) per cent. of solids not fat, we get the two last columns of the above table.

Speaking, then, in round numbers, which is the only way in which we have any right to speak, we may say of the four samples in question that No. 1 contains from 19 to 22 per cent. of water fraudulently added; No. 3 from 10 to 13 per cent.; No. 9 from 16 to 18 per cent.; and No. 11 from 18 to 20 per cent.

Taking the standard of the public analyst's for fat, viz., 2.5 per cent., we have seen that nine samples fell below this standard; and it will be seen that four samples fall below 2 per cent. Of these four samples, two, Nos. 9 and 11, are watered milks. The other two Nos., 2 and 12, have a comparatively high percentage of solids not fat.

No. 2 contains 1.65 per cent. fat, \(2.5-1 \cdot 65=0.85\). In all probability, therefore, 0.85 per cent. of fat has been removed by skimming; and since 0.2 of fat equals 1 of cream (roughly) it follows that about \(4 \frac{1}{4}\) per cent, of cream has been removed by skimming. By the above rule 2.5 per cent. of fat would give 10 per cent. of creamthe normal quantity. Similarly, about \(2 \frac{1}{2}\) per cent. of cream appears to have been removed from No. 12.

Quality of milk greatly improved in Great Britain by operation of Adalteration of Food Act.

Experience has shown that, in the towns of Great Britain where the Adulteration of Food Act has been enforced, the quality of the milk has improved greatly; and there is no doubt that a similar result will follow here. The fact that the milk is both skimmed and watered to a considerable extent is clearly shown by the foregoing analyses, while there are, without doubt, some perfectly honest dealers who supply genuine milk. To enforce the penalties of the Act will be as beneficial to these deserving tradesmen as to the public at large.

I have著the honor to be, Sir, Your most obedient servant,

> W. HODGSON ELLIS, Public Analyst, Toronto.

INSPECTION; OF FOOD.
First Report of the Public Analyst for the Inland Revenue District of Montreal, under provisions of the Inland Revenue Act of 1875.

Montreal, 31st October, 1876.
To the Commissioner of Inland Revenue :-
Sir,-I have the honor to report that I have received from the Collector of this District, Mr. Dunbar Browne, since my appointment up to October 1st, forty-five samples of food for analysis, viz:-

Five samples of ennfectionery.
Twelve samples of milk.
Three samples of preserved meats.
Six samples of tea.
Fourteen samples of ground spices.
Five samples of quinine wine.

Of these, I have reported four samples of tea and ten samples of spices, as adulterated; and four sample; of milk, as deficient in the natural proportion of cream.

To my official certificates I now beg to add the following remarks:--

\section*{Confectionery.}

The articles of confectionery examined, were, with one excep- Confectionery tion, imports from America, and of the better class of such goode; in these I have found no adulteration or any injurious coloring ingredient.

\section*{Milk.}

The samples submitted to me (on two consecutive days only) presented some anomalies which will, I believe, be provided against in the future by a better mode of sampling. The results indicated a deficiency of cream, but no considerable addition of water. It would, I think, be desirable to make provision by Order in Council against this fraudulent practice, as well as against the addition of water to new milk.

I have already submitted to you my opinion, which I now repeat, that it is important, in order to establish decided evidence of adulteration in this important article of diet, to determine, by a series of analyses, milk standards, for summer and winter supply from pasture-fed and stall-fed cattle, respectively.

My own experience coincides with that of Dr. Girdwood, of this city, that the milk standard for this country should be higher than that adopted as a London standard, and I beg to suggest the following as a fair average standard of Canadian milk, viz :-

Butter fat, \(3 \cdot 5\) per cent.
Caseine and sugar, 10.0 per cent.
Mineral salts, 0.7 per cent.
The limits agreed to by the Society of Analysts in England, for City supply are as follows, viz:-

Butter fat, not less than 2.5 per cent.
Other solids not less than \(9 \cdot 0\) per cent, or more than 12.0 per cent.
This average is below any recorded analysis of Canadian Milk, which has come under my observation.

\section*{Preserved Meats.}

The canned meats which I have examined were of good quality Preserved
contained no chemical preparation or mineral admixture. and contained no chemical preparation or mineral admixture.

\section*{Teas.}

The samples examined were from two houses only, and those Teas. condemned were of the lowest grade of cheap teas. Four samples out of the six examined were adulterated with foreign and worthless leaves. I have reason to believe, that teas of a much higher grade are not free from similar adulterations.

\section*{Ground Spices.}

Out of 14 samples of ground spices, ten samples were found Ground spices more or less adulterated with worthless ingredients, viz:-White and Black Peppers, Ginger, Cloves and Cassia in substitution for Cinnamon. As I have a series of additional samples under investigation, I beg to defer my remarks on this subject until my next report.

\section*{Quinine Wine.}

Quinine wine.
Through very extensive advertizing and active competition this popular medicine has become an article of great demand. Out of the five samples examined (all manufactured in Montreal) only one is of general character and strength of the official preparation of that name, ordered in the British Pharmacopoia.

This has for many years been in popular use as "Collier's Quinine Wine," containing " Orange Wine," which is lightly alcholised, and sulphate of Quinine in the proportion of one grain in each fluid ounce. Sample 144 is of this character, the rest are highly alcholised wines containing only one-third or one-half the proportion of Quinine, while the dose prescribed is doubled. Instead of the simple tonic of the original Quinine Wine, these are powerful alcoholic stimulants. Indeed the sample No. 145 containing Gentian and Nux Vomica with 20 per cent of Alcohol, would be more correctly described as a "Mixed Bitters" than as "Quinine Wine."

There is therefore obvious danger of these preparations being used as stimulants rather than as simple Tonics. I am not prepared, however, to state that these samples are adulterated, inasmuch as they are sold to the publie as "nostrums" and not as "official" medicines.

I have the honor to be
Your obedient servant,
J. BAKER EDWARDS, Ph.D., D.C.L.

Montreal, January 20th, 1877.
Quartmrly Report of Montreal Public Analyst, with tabular stateof results of Analysis, for three months ending December 31st, 1876.


\section*{(Translation.)}

Quebec, 16th January, 1877.

\author{
To the Hon. R. Laflamme, \\ Minister of Inland Revenue, Ottawa.
}

Sir,--I have the honor to submit to you the following report respecting the inspection of a certain number of alimentary substances which are consumed in the Quebec Division.

The number of such alimentary substances which have been sub- Number of mitted to me for inspection from the Office of Inland Revenue has samples been 73. They are as follows:--
\begin{tabular}{|c|c|}
\hline 1st. Milk......................... & 24 specimens. \\
\hline 2nd. Tea......................... & 14 do \\
\hline 3rd. Coffee. & 8 do \\
\hline 4th. Mustard. & 6 do \\
\hline 5th. Pepper. & 6 do \\
\hline 6th. Other spices (ginger).... & 8 do \\
\hline 7th. Sugar ........................ & 7 do \\
\hline Total. & 73 specimens \\
\hline
\end{tabular}

By examining the results of my chemical analysis and microscopic examinations, hereto attached, you will perceive that of the seventy-three specimens above mentioned, thirty-seven were found to be pare, thirty were found to be adulterated, falsified, or altered in some manner or other, and six were doubtful.

Altered or falsified and doubtful specimens are classed as follows Samples alAltered or falsified. Doubtful.


Obsirvations and Rraarks.
Milk.
One of the principal alterations to which milk is subjected in the Hilk. Quebec Division is the skimming of that liquid before sale. Thus, while the weight of fatty matter in pure milk should be, at least, on an average, from 3 to 4 per cent., in specimen No. 8 that propor. tion was only 0.5 per cent. ; in specimen No. \(9,1.2\); in specimen No. \(10,0.5\); in specimen No. 120.8 .

Among the specimens classified by me as doubtful, I shall specity No. 4, the weight of fatty matter in which only amounted to \(2 \cdot 6\), and the specific gravity of which was 1.033 ; No. 8, the weight of fatty matter in which only amounted to 2.4 ; Nos. 19, 20 and 22, in which the quantity by weight of solid matter was only 9 per cent. and a fraction, and the quantity of water 90 per cent.; at the ime of the year when milk is the richest in quality, water had probably been added.

In the case of one of the specimens, No. 352, the quantity by weight of fatty matter reached the unusual figure of 7 per cent.

As to the addition of certain foreign substances,--organic and inorganic-such as amylaceous substances, portions of brain substance, carbonates of lime, magnesia, \&c., of which mention is so frequently made in books which treat of this matter, I did not ascertain the presence of any of them in the samples examined by me.

\section*{Tea}

Samples of tea not'adulterated.

I did not ascertain any falsification or adulteration of any description in the 14 specimens of tea which I examined. That remarkable fact is to be attributed, without doubt, to the great care with which the chemical examination and inspection of the article is made in England and other countries.

By microscopic examination I ascertained the absence of leapes of foreign character, with the exception of a couple of specimens in which the proportion was so very small that I did not besitate to attribute that alteration to some accidental mingling.

In no one of these 14 specimens did I find the slightest trace of magnetic oxide, Prussian blue, indigo, salts of copper, \&c., \&c., substances so frequently employed in former times, either to increase the weight of that important article of commerce, or to impart to it certain artificial shades of color. The proportions of tannin, of soluble organic matter and of salts contained in those several specimens gave sufficient evidence that none of them contained leaves of tea which had been already infused.

\section*{Coffee.}

\section*{All the sam-} ples of coffee adulterated.

Adulteration of mustard.

The eight specimens of coffee which I examined were all, without exception, adulterated. In every specimen I found a greater or less portion of peas and beans roasted and ground, with sometimes an addition of chicory in greater or less quantity.

\section*{Mustard.}

I examined six specimens of mustard and found them all adulter ated.

The foreign substances were wheat flour and turmeric. The falsification in the six cases was so uniform that I have reason to believe that it is practised according to the same formula or receipt.

\section*{Pepper.}

\section*{Adulteration of.pepper.}

Of the six specimens of pepper examined, only one was found pure, (No. 342.) In the five other specimens the microscope revealed the presence of a proportion of wheat flour varying from about a quarter to a half of the whole. From appearances, the flour had been slightly roasted before being added to the pepper, in order that the color of the latter should not be too much ohanged.

\section*{Other Spices (Ginger.)}

The eight specimens of ginger which I examined were all adulter- Other spices. ated with one exception. In six of these eight specimens the adulteration consisted of the addition of a greater or less quantity of wheat flour, slightly roasted. In one, the adulteration consisted of the addition of about one quarter of bean flour.

\section*{Sugar.}

Of the seven specimens of sugar which I examined three were Sugar yellow moist sugar, quite unrefined, two were completely refined, and two were partially refined.

The three specimens of yellow sugar, as well as the two specimens of completely refined sugar, presented the ordinary proportions of the two saccharine matters, glucose and cane sugar or saccharose.

The two specimens of half refined moist sugar (Nos. 5 and 7), while presenting about the same degree of whiteness, shewed a great difference in the proportions of the two saccharine substances, glucose and saccharose. Thus, while specimen No. 5 contained 2 per cent of water and 5 per cent of glucose, specimen No. 7, while containing the same proportion of water, only contained traces of glucose ; so that the proportions of cane sugar in the two specimens are relatively 92.25 (No. 5) and 97.75 (No. 7.)

In view of the unusual whiteness of the moist sugar No. 5, the question presents itself whether the proportion of glucose---5 per cent.--which it contains, is not a falsification or adulteration by means of refined glucose manufactured from certain amylaceous substances. To decide that question, a greater number of experiments of comparison would bo necessary.

As to organic and mineral substances sometimes used for the adulteration of sugar, such as gam, dextrine, farinacoous substances, carbonate of lime, sulphate of lime, phosphate of lime, sand, \&c., \&c., none such wore found in the seven specimens which were submitted to me for examination.

Results of chemical analysis and microscopic examinations :
Mill:. Milk.
Note.-The figures in parenthesis correspond with the Nos. of my original reports in the printed forms.
No. 1 (301.)
\begin{tabular}{|c|c|}
\hline Specific gravity.. & 1.025 \\
\hline Total solid matter . .......... & 15.4 p.c. \\
\hline Fatty matter.................. & \(3 \cdot 2\) \\
\hline Sugar........................... & \(4 \cdot 9\) \\
\hline Caseine ......................... & \(5 \cdot 5\) \\
\hline Salts............................. & \(1 \cdot 8=15 \cdot 4\) \\
\hline Water ......................... & 84.6 \\
\hline & \(100 \cdot 0\) \\
\hline
\end{tabular}

No. 2 (302.)


No. 3 (303.)
Specific gravity ..... 1.030
Total solid matter. ..... 146 .
Fatty matter ..... 0.5
Sugar ..... 3.8
Salts ..... 0.8
Caseine ..... \(9.5=14.6\)Water.\(85 \cdot 4\)
\(100 \cdot 0\)
This milk had been skimmed.
No. 4 (304).
Specific gravity ..... 103.3
Total solid matter. ..... 15 p. ••
Fatty matter ..... 2.6
Sugar ..... 46
Salts ..... \(0 \cdot 9\)
Caseine ..... \(6 \cdot 9=15 \cdot 0\)
Water ..... \(85 \cdot 0\)
\(100 \cdot 0\)
This sample was probably partially skimmed.
No. 5 (305).
Specific gravity ..... \(1 \cdot 030\)
Total solid matter ..... \(16 \cdot \mathrm{~d}\) p. e.
Fatty matter. ..... 4.0
Sugar ..... \(4 \cdot 6\)
Caseine ..... \(7 \cdot 0\)
Salts ..... \(0 \cdot 4=16\)
Water ..... 84
100
No. 6 (306).
Specific gravity. ..... \(1 \cdot 028\)
Total solid matter ..... 12 p. c.
Fatty matter. ..... \(4 \cdot 0\)
Sugar ..... \(5 \cdot 0\)
Caseine ..... 2.5
Salts ..... \(0 \cdot 5=12\)
Water. ..... 88
100
No. 7 (329.)
Specific gravity ..... 1.025
Total solid matter. 15 p.c.
Fatty matter. ..... \(4 \cdot 5\)
Sugar. ..... \(3 \cdot 0\)
Caseine. ..... 6.92
Salts. ..... \(0.5 x=15\)
Water ..... 85
40 Victoria.
No. 8 (330.)
Specific gravity ..... 1.028
Total solid matter ..... 11 p.c.Fatty matter.
\(2 \cdot 4\)Sugar
\(2 \cdot 3\)
Caseine ..... \(5 \cdot 96\)
Salts. ..... \(0.34=11\)
Water ..... 89
100
Doubtful, probably partially_skimmed.
No. 9 (337).
Specific gravity ..... 1.028
Total solid matter ..... \(16 \cdot 12\)
Fatty matter ..... \(1 \cdot 2\)
Sugar... ..... \(5 \cdot 6\)
Caseine ..... \(9 \cdot 2\)
Salts ..... \(0 \cdot 2=16 \cdot 12\)
Water ..... 83.88
\(100 \cdot 00\)
This milk was skimmed.
No. 10 (338).
Specific gravity ..... \(1 \cdot 028\)
Total solid matter ..... 15 p. c.
Fatty matter ..... 0.5
Sugar ..... 6.1
Caseine ..... \(8 \cdot 04\)
Salts ..... \(0.36=15\)
Water ..... 85
100
This milk has been skimmed.
No. 11 (345).
Specific gravity ..... 1.025
Total solid matter ..... \(13 \cdot 5\)
Fatty matter ..... 4.0
Sugar. ..... \(5 \cdot 2\)
Caseine ..... 4.0
Salts ..... \(0 \cdot 3=13 \cdot 5\)
Water ..... 86.5
\(100 \cdot 0\)
No. 12 (346).
Specific gravity ..... \(1 \cdot 030\)
Total solid matter. ..... \(16 \cdot 6\)
Fatty matter ..... 0.8
Sugar. ..... \(8 \cdot 4\)
Caseine ..... \(7 \cdot 0\)
Salts ..... \(0 \cdot 4=16 \cdot 6\)
Water ..... \(83 \cdot 4\) ..... \(100 \cdot 0\)
This milk was skimmed.4-23 \(2 * * *\)19
No. 13 (347).
Specific gravity ..... 1.030
Total solid matter ..... \(18 \cdot 7\)
Fatty matter ..... 4.0
Sugar ..... \(8 \cdot 2\)
Caseine ..... 6.0
Salts ..... \(0.5=18.7\)
Water ..... \(81 \cdot 3\)\(100 \cdot 0\)
No. 14 (348).
Specific gravity ..... 1.029
Total solid mattor ..... \(18 \cdot 2\)
Fatty matter ..... 3.0
Caseine ..... \(6 \cdot 9\)
Sugar ..... 8.0
Salts ..... \(0 \cdot 3=18 \cdot 2\)
Water ..... \(81 \cdot 8\)
\(100 \cdot 0\)
No. 15 (349).
Specific gravity ..... \(1 \cdot 030\)
Total solid matter. ..... \(11 \cdot 8\)
Fatty matter ..... 2.9
Caseine ..... 3.0
Sugar ..... \(5 \cdot 6\)
Salts ..... \(0 \cdot 3=11.8\)
Water ..... \(88 \cdot 2\)100
No. 16 (350.)
Specific gravity ..... 1.028
Total solid matter ..... \(14 \cdot 8\)
Fatty matter ..... 3.0
Caseine ..... \(6 \cdot 4\)
Sugar ..... \(5 \cdot 0\)
Salts ..... \(0.4=14.8\)
Water ..... \(85 \cdot 2\)\(100 \cdot 0\)
No. 17 (351).
Specific gravity ..... 1.028
Total solid matter ..... 14 p. c.
Fatty matter. ..... \(4 \cdot 2\)
Sugar. ..... 4.0
Caseine ..... \(5 \cdot 3\)
Salts ..... \(0 \cdot 5=14\)
Water ..... 86
40 Victoria Sessional Papers (No.4)
No. 18 (352).
Specific gravity ..... 1.025
Total solid matter............ 15 p. c.
Fatty matter. ..... \(7 \cdot 0\)
Sugar ..... \(5 \cdot 2\)
Caseine ..... 2.4
Salts ..... \(0 \cdot 4=15\)
Water ..... 85 ..... 100This sample is extremely rich in cream.No. 19 (353).
Specific gravity ..... 1.025
Total solid matter. ..... \(9 \cdot 7\)
Fatty matter. ..... 3.2
Sugar ..... 4.0
Caseine. ..... \(2 \cdot 1\)
Salts ..... \(0 \cdot 4=9 \cdot 7\)Water\(90 \cdot 3\)
100
This sample is doubtful; probably diluted with water.
No. 20 (354).
Specific gravity. ..... 1.025
Total solid matter. ..... \(9 \cdot 4\) p. c.
Fatty matter. ..... \(3 \cdot 0\)
Sugar ..... 3.0
Caseine. ..... \(3 \cdot 1\)
Salts ..... \(0 \cdot 3=9 \cdot 4\)Water90.6
\(100 \cdot 0\)
Probably diluted with water.
No. 21 (355).
Specific gravity. ..... \(1 \cdot 030\)
Total solid matter ..... \(12 \cdot 4\) p.c.
Fatty matter ..... \(4 \cdot 6\)
Sugar ..... \(4 \cdot 0\)
Caseine ..... \(3 \cdot 4\)
Salts ..... \(0 \cdot 4=12 \cdot 4\)
Water. ..... \(87 \cdot 6\)
No. 22 (356).
Specific gravity ..... \(1 \cdot 028\)
Total solid matter. ..... 9.5
Fatty matter ..... \(3 \cdot 4\)
Sugar ..... \(3 \cdot 4\)
Caseine ..... \(2 \cdot 3\)
Salts ..... \(0.4=9.5\)
Water ..... \(90 \cdot 5\)
\(100 \cdot 0\)
Probably diluted with water.
No. 23 (357).
Specific gravity ..... 1.024
Total solid matter ..... 12
Fatty matter ..... 3.0
Sugar ..... \(5 \cdot 0\)
Caseine ..... 3.5
Salts ..... \(0.5=12.0\)
Water ..... 88.0
\(100 \cdot 0\)
No. 24 (358).
Specific gravity ..... 1.029
Total solid matter 14 p.c.
Fatty matter ..... 4.0
Sugar ..... \(5 \cdot 0\)
Caseine ..... 4.6
Salts ..... \(0.4=14.0\)
Water ..... 86.0
\(100 \cdot 0\)Tea.Green tea
No. 1 (307).Green Tea.
Moisture ..... 6.0
Soluble matter, minus tannin ..... \(25 \cdot 28\)
Tannin ..... \(11 \cdot 0\)
Organic matter, insoluble ..... 51.92
Salts, soluble. ..... 2.8
Salts, insoluble ..... 3.0
No. 2 (308).
Black tea.
Black Tea.
Moisture ..... 6.0
Soluble matter, minus tannin ..... \(18 \cdot 5\)
Tannin ..... \(10 \cdot 0\)
Organic matter, insoluble ..... \(61 \cdot 5\)
Salts, soluble ..... \(2 \cdot 4\)
Salts, insoluble ..... 1.6
40 Victorna.
No. 3 (309).
Green Tea.
Moisture ..... 6.0
Soluble matter, minus tannin ..... \(27 \cdot 0\)
Tannin ..... \(10 \cdot 0\)
Organic matter, insoluble ..... \(51 \cdot 0\)
Salts, soluble ..... \(3 \cdot 0\)
Salts, insoluble ..... \(3 \cdot 0\)
\(100 \cdot 0\)
No. 4 (310).
Green Tea.
Moisture ..... 6.0
Organic matter, soluble, minus tannin ..... \(23 \cdot 7\)
Tannin ..... \(8 \cdot 3\)
Organic matter, insoluble ..... \(54 \cdot 8\)
Salts, soluble ..... \(2 \cdot 6\)
Salts, insoluble ..... 4.6
\(100 \cdot 0\)
No. 5 (311).
Green Tea.
Moisture ..... \(6 \cdot 0\)
Organic matter, soluble, minus tannin ..... 24.6
Tannin ..... \(10 \cdot 4\)
Organic matter, insoluble ..... \(53 \cdot 8\)
Salts, soluble ..... \(3 \cdot 1\)
Salts, insoluble ..... \(2 \cdot 1\)
No. 6 (312).
Green Tea.
Moisture ..... 6.0
Organic matter, soluble, minus tannin ..... \(25 \cdot 4\)
Tannin ..... \(9 \cdot 6\)
Organic matter, insoluble ..... 53.0
Salts, soluble ..... 3.6
Salts, insoluble ..... \(2 \cdot 4\)
\(100 \cdot 0\)
No. 7 (313).
Green Tea.
Moisture ..... \(8 \cdot 5\)
Tannin ..... \(11 \cdot 1\)
Other soluble organic matter ..... \(20 \cdot 4\)
Insoluble organic matter ..... \(52 \cdot 8\)
Salts, soluble. ..... 4.5
Salts, insoluble ..... 2.7
40 VictoriaSessional Papers (No.4.)
No. 8 (314).
Green Tea
Moisture ..... \(8 \cdot 0\)
Tannin ..... \(10 \cdot 0\)
Other soluble organic matter ..... \(19 \cdot 0\)
Insoluble organic matter ..... \(56 \cdot 5\)
Salts, insoluble ..... \(3 \cdot 4\)
Salts, soluble ..... \(3 \cdot 1\)
No. 9 (315).Green Tea.
Moisture ..... \(8 \cdot 0\)
Tannin ..... \(12 \cdot 9\)
Other soluble organic matter ..... \(17 \cdot 1\)
Insoluble organic matter ..... \(53 \cdot 7\)
Salts, soluble ..... \(3 \cdot 8\)
Salts, insoluble ..... \(3 \cdot 5\)
\(99 \cdot 0\)
Loss ..... \(1 \cdot 0\) ..... \(1 \cdot 0\)\(100 \cdot 0\)
Green Tea.
No. 10 (316).
Moisture ..... 7.0
Tannin ..... \(12 \cdot 5\)
Other soluble organic matter. ..... \(19 \cdot 5\)
Insoluble organic matter. ..... \(54 \cdot 5\)
Salts, soluble. ..... \(4 \cdot 1\)
Salts, insoluble. ..... \(2 \cdot 4\)\(100 \cdot 0\)
No. 11 (317).
Moisture ..... \(9 \cdot 0\)
Tannin ..... \(9 \cdot 1\)
Other organic soluble matter. ..... \(19 \cdot 9\)
Insoluble organic matter ..... 54.0
Salts, soluble ..... \(3 \cdot 3\)
Salts, insoluble ..... \(4 \cdot 7\)\(100 \cdot 0\)
No. 12 (318).
Moisture ..... \(8 \cdot 0\)
Tannin ..... \(9 \cdot 0\)
Other soluble organic matter ..... \(20 \cdot 0\)
Insoluble organic matter ..... \(56 \cdot 5\)
Salts, soluble ..... \(3 \cdot 7\)
Salts, insoluble. ..... 2.8

No. 13 (327).
Moisture............... . ........ ................... 8. 8
Tannin.............................................. \(11 \cdot 3\)
Other soluble organic matter................... 17.7
Insoluble organic matter....................... 57.5
Salts, soluble........................................ 3.5
Salts, insoluble ....................................... \(2 \cdot 0\)
\(100 \cdot 0\)
No. 14 (328).
Moisture.............................................. 7.0
Tannin \(12 \cdot 0\)
Other soluble organic matter................... \(18 \cdot 0\)
Insoluble organic matter............................ 57.5
Salts, soluble..................... ................ \(2 \cdot 5\)
Salts, insoluble........................................ \(3 \cdot 0\)
\(100 \cdot 0\)

\section*{Cofree.}
\[
\text { No. } 1 \text { (319). }
\]

About one-third coffee, the remainder is a mixture of chicory, and roasted peas and beans.

No. 2 (320).
About one-eighth coffee; the remainder is a mixture of chicory and of roasted peas and beans.

No. 3 (321).
About one-eighth coffee; the remainder is a compound of a little chicory, and chiefly roasted peas and beans.

No. 4 (322).
One-eighth coffee; the remainder is a mixture of chicory, and of roasted peas and beans.

No. 5 (323).
About one-half coffee; the remainder is a mixture of roasted peas and beans-no chicory.

No. 6 (324).
About one-half coffee; the remainder is a mixture of roasted peas and beans. No chicory, or very little.

No. 7 (325).
One-half coffee, the other half roasted peas; very little chicory.
No. 8 (326).
Little or no coffee; almost the whole is a mixture of chicory and roasted peas and beans.

At least two-thirds of wheaten flour, the remainder being a mixture of turmeric and mustard.

No. 2 (332).
Two-thirds of wheaten flour, the remainder being a mixture of turmeric and a little mustard.

No. 3 (333).
Two-thirds of wheaten flour, the remainder being a mixture of turmeric, with a little mustard.

No. 4 (334).
Two-thirds wheaten flour, the remainder being a mixture of turmeric and a little mustard.

No. 5 (335).
Two-thirds wheaten flour, the remainder being a mixture of turmeric and a little mustard.

No. 6 (336).
Two-thirds wheaten flour, the remainder a mixture of turmeric, with a little mustard.

\section*{Powdered Pepper.}

\section*{Mustard.}

No. 1 (331).
\(\qquad\)

No. 1 (339).

Half pepper, half wheaten flour.
No. 2 (340).
Half peppor, half wheaten flour.
No. 3 (341).
Pepper, mixed with about one quarter of wheaten flour.
No. 4 (342).
Pure pepper, without adulteration.
No. 5 (343).
Half pepper, half whoaten flour.
No. 6 (344).
Half popper, half wheaten flour.

No. 1 (359).
Threc-quarters ginger, one-quartor wheaten flour.
No. 2 (360).
One-half ginger, one-half wheaten flour.
No. 3 (361).
Ono-half ginger, one-half wheaten flour.
No. 4 (362).
Hardly a trace of ginger; almost wholly wheaten flour.
No. 5 (363).
One-half ginger, one-half wheaten flour.
No. 6 (364).
Pure ginger, without adulteration.
No. 7 (365).
Three-quarters ginger, one-quarter bean flour.
No. 8 (366).
One-half ginger, one-half wheaten flour.

Yellow Moist Suyar
Water ..... 2.50
Glucose ..... \(5 \cdot 00\)
Mineral matter ..... \(0 \cdot 30\)
Matter in suspension ..... none.
Cane sugar ..... 92.20
Yellow, Moist Sugar.
Water ..... \(3 \cdot 00\)
Glucose ..... \(5 \cdot 00\)
Mineral matter ..... 1.50
Matter in suspension traces. ..... \(90 \cdot 50\)Cane sugar

No. 5 (371).

\section*{Half-refned Moist Sugar.}
Water ..... 2.00
Glucose ..... \(5 \cdot 00\)
Mineral matter ..... 0.75
Matter in suspension ..... none.
Cane sugar ..... \(92 \cdot 25\)
\(100 \cdot 00\)

No. 6 (372).

White Moist Sugar, completely Refined and Crystallised.
Water ..... 1.50
Glucose ..... traces.
Mineral matter ..... \(0 \cdot 25\)
Matter in suspension ..... none.
Cane sugar ..... \(98 \cdot 25\)
Half-refined Crystallised Moist Sugar.
Water ..... \(2 \cdot 00\)
Glucose ..... traces.Mineral matter0.75
Matter in suspension ..... none.97.25\(100 \cdot 00\)
F. A. II. La RUE, M.A., M.D.,
Food Analyst.


APPENDIX IV.-INSPECTION OF FOOD.


APPENDIX IV.-INSPECTION OF FOOD.-Tabulated Statement, \&c.-Continued.

GINGER.

APPENDIX IV.-INSPECTION OF FOOD.-Tabulated Statement, \&c.-Continued.

POTTED MEATS.
\begin{tabular}{|c|c|c|c|c|c|}
\hline \begin{tabular}{c}
\hline July \\
\hline 31... \\
do \\
do \\
do \\
\end{tabular} & \begin{tabular}{l}
J. B. Edwards. \\
do \\
do
\(\qquad\)
\end{tabular} & \begin{tabular}{l}
Montreal \\
do \\
do
\(\qquad\)
\(\qquad\)
\(\qquad\)
\end{tabular} & \[
\begin{aligned}
& 120 \\
& 121 \\
& 122
\end{aligned}
\] & \begin{tabular}{l}
Aikins, Armstrong \& Co...... \\
do
\(\qquad\) North American Packing Co.
\end{tabular} & \begin{tabular}{l}
Preserved corned beef, in good condition, and contains no ingredient injurious to health. \\
One tin, soup and boulli, in good condition and fit for food, and contains no ingredient injurious to health. \\
One tin, No. 3, the Bologna, in good condition, and contains no ingredient injurious to health.
\end{tabular} \\
\hline \multicolumn{6}{|l|}{SPIRITS.} \\
\hline Aug. 28...! & |W. H. Elis..................| & Toronto ........... & 232 & F. A. Walker........... ......... & Raw spirits, consisting of 75 per cent. by volume, absolute alcohol, and 25 per cent. of water; •0234 per cent. residue it contains no sulphuric acid. \\
\hline
\end{tabular}

\title{
APPENDIX IV.-INSPECTION OF FOOD.- \\ MILK.
}


Tabulated Statement, \&e.-Continued.
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|c|}{Results of Analysis.} & \\
\hline \multicolumn{6}{|c|}{Contained in 100 Parts.} & \multirow[t]{3}{*}{} & \multirow[t]{3}{*}{Remarks by the Analyst.} \\
\hline \multirow{2}{*}{Butter Fat.} & \multirow{2}{*}{Caseine.} & \multirow[t]{2}{*}{Sugars and Salts} & \multirow{2}{*}{Ash.} & \multicolumn{2}{|c|}{Total.} & & \\
\hline & & & & Solids. & Water. & & \\
\hline p. cent. & nt. & p. cent. & p. cent & p. & & & \\
\hline \(3 \cdot 50\) & \(4 \cdot 10\) & \(5 \cdot 10\) & 0.75 & 12.70 & \(87 \cdot 30\) & 11.50 & Fair average milk. \\
\hline \(4 \cdot 00\) & \(3 \cdot 30\) & \(3 \cdot 70\) & ......... & 11.00 & \(89 \cdot 00\) & 12.50 & Cream in excess of average. \\
\hline \(3 \cdot 00\) & \(4 \cdot 20\) & \(6 \cdot 80\) & ........... & 14.00 & 86.00 & \(9 \cdot 00\) & Cream removed; salts in excess, but not added. \\
\hline \(2 \cdot 50\) & \(4 \cdot 10\) & 5.90 & & 12.50 & \(87 \cdot 50\) & 7.50 & do do \\
\hline \(2 \cdot 50\) & \(4 \cdot 00\) & 4.00 & & \(10 \cdot 50\) & \(89 \cdot 50\) & 7.50 & Minimum. \\
\hline 5.00 & 3.50 & \(3 \cdot 50\) & .... & 12.00 & 8800 & 15.50 & Cream in excess ; must have been badly sampled. \\
\hline \(3 \cdot 00\) & 4.00 & 7.00 & & 14.00 & 86.00 & & Deficient in cream; salts in excess. \\
\hline \(3 \cdot 00\) & \(3 \cdot 05\) & \(7 \cdot 45\) & & 13.50 & \(86 \cdot 50\) & & Cream and cheese, deficient; salts in excess. \\
\hline \(5 \cdot 25\) & 3.25 & 550 & & 14.00 & 86.00 & & Excess of cream. \\
\hline \(2 \cdot 25\) & \(2 \cdot 75\) & \(9 \cdot 00\) & ........... & 14.00 & \(86 \cdot 00\) & ............ & Cream deficient; salts in excess. \\
\hline \(2 \cdot 00\) & \(4 \cdot 20\) & \(5 \cdot 80\) & & 12.00 & 88.00 & ........... & Cream deficient and solids; excess of water. \\
\hline \(4 \cdot 50\) & 4.50 & 6.00 & & \(15 \cdot 00\) & 85.00 & & Good normal milk over average. \\
\hline \(2 \cdot 00\) & \(3 \cdot 50\) & \(9 \cdot 40\) & 0.90 & \(15 \cdot 80\) & \(85 \cdot 10\) & \(9 \cdot 00\) & Adulterated with from 15 to 20 per cent. of water, and 2 per cent. of common salt. \\
\hline \(2 \cdot 95\) & 4.00 & \(5 \cdot 20\) & 0.80 & \(12 \cdot 95\) & 87.05 & 7.95 & Genuine milk of fair average quality. \\
\hline \(3 \cdot 00\) & \(4 \cdot 10\) & 6.00 & 0.90 & 14.00 & \(86 \cdot 00\) & \(9 \cdot 00\) & Fair average sample of milk. \\
\hline \(1 \cdot 75\) & \(3 \cdot 50\) & 8.50 & \(1 \cdot 20\) & 15.95 & 86.25 & \(5 \cdot 25\) & Adulterated with from 15 to 20 per cent. of water, and 2 per cent. of common salt. \\
\hline 1.50 & \(2 \cdot 13\) & 9.00 & \(2 \cdot 07\) & \(14 \cdot 70\) & \(85 \cdot 30\) & \(4 \cdot 50\) & Adulterated with from 20 to 25 per cent. of water, and 2 per cent. of common salt. \\
\hline \(2 \cdot 25\) & 2.25 & \(7 \cdot 50\) & \(1 \cdot 75\) & 13.75 & 86.25 & 6.75 & Adulterated with from 15 to 20 per cent. of water, and 1 per cent. of common salt. \\
\hline \(2 \cdot 75\) & \(2 \cdot 04\) & \(8 \cdot 00\) & 1.96 & \(14 \cdot 75\) & 85.25 & \(8 \cdot 25\) & Adulterated with from 10 to 15 per cent. of water, and 1 per cent. of common salt. \\
\hline \(3 \cdot 30\) & \(4 \cdot 00\) & \(5 \cdot 20\) & 0.80 & 13.30 & \(86 \cdot 70\) & 9.90 & Genuine milk. \\
\hline 2.00 & 3.00 & \(6 \cdot 00\) & \(0 \cdot 80\) & 11.80 & \(88 \cdot 20\) & 6.00 & Adulterated with from 10 to 15 per cent. of water. \\
\hline \(1 \cdot 50\) & \(2 \cdot 75\) & 5.25 & 0.70 & \(10 \cdot 20\) & 89.80 & \(4 \cdot 50\) & Adulterated with 20 per cent. of water. \\
\hline 2.00
3.60 & 3.00 & \(7 \cdot 80\) & \(0 \cdot 60\) & 13.40 & 86.60 & 6.00 & do 15 do water. \\
\hline 3.60
2.20 & 3.00
2.50 & 7.50
5.50 & 0.70
0.60 & \(14 \cdot 70\)
10.80 & \(85 \cdot 30\)
\(89 \cdot 20\) & 10.50
6.60 & Fair quality. \\
\hline \(1 \cdot 75\) & \(2 \cdot 00\) & \(5 \cdot 00\) & 0.50 & 14.80
9.25 & 89.20
90.75 & 6.60
5.25 & Adulterated with 20
do
30 \\
\hline \(4 \cdot 50\) & \(2 \cdot 75\) & 3.05 & \(\cdot 70\) & 12.00 & 88.00 & 13.50 & Good and genuine milk. \\
\hline \(5 \cdot 10\) & 3.20
3.00 & 3.00 & \(\cdot 70\) & 12.00 & 88.00 & 15.30 & do do \\
\hline 1.75 & 3.00 & \(6 \cdot 15\) & -60 & 11.50 & 88.50 & \(5 \cdot 25\) & Adulterated by the addition of 20 per cent. water. \\
\hline \(1 \cdot 70\) & 3.00 & 5.50 & -60 & \(10 \cdot 80\) & \(89 \cdot 20\) & \(5 \cdot 10\) & do do do \\
\hline 2.13
1.70 & 6.93
9.67 & & \(\cdot 50\) & \(\begin{array}{r}9.58 \\ \hline 11.98\end{array}\) & 90.42
88.02 & & Water has been trandulently added. \\
\hline 1.70
3.06 & 9.67
8.70 & .... & .61
.66 & 11.98 & 88.02
87.60 & & Contains only about half the proper quantity of cream, probably caused by the addition of skimmed milk. \\
\hline \(3 \cdot 06\) & 8•70 & & . 66 & 12.42 & 87.60
39 & ..... & According to the English standard genuine. \\
\hline
\end{tabular}

\section*{APPENDIX IV.-INSPECTION OF FOOD.-}

MILK.-
\begin{tabular}{|c|c|c|c|c|}
\hline Date. & Name of Analyst. & Division. & No. of
Analyst's
Report. & Vendor. \\
\hline 1876. & & & & \\
\hline July 28...... & W. H. Ellis & Toronto....... .... & 223 & P. Riley........................... \\
\hline do 28. & do & do & 224 & Toronto Dairy Co............... \\
\hline do 28...... & do ................ & do ............... & 225 & J. Preston........................ \\
\hline \(\begin{array}{ll}\text { do } & 28 . . . . \\ \text { do } & 29 . . .\end{array}\) & \begin{tabular}{ll} 
do \\
do &....................\(~\) \\
\hline
\end{tabular} & \(\begin{array}{ll}\text { do } \\ \text { do } & . . . . . . . . . . . . . . . . . . . . . ~\end{array}\) & \({ }_{227}^{226}\) & Thos. Williams ..................... \\
\hline do 29...... & do & do & 228 & Roxburgh Dairy................. \\
\hline do 31...... & do & do & 229 & J. Hughes......................... \\
\hline do 31..... & do ............... & do ............... & 230 & Dover Court Dairy............... \\
\hline Aug. 12...... & F. A. H. LaRue............... & Quebec. & \({ }_{301}^{231}\) & Thomas Lamb..................... \\
\hline do 23...... & F. A. do ............. & do .................... & 302 & - Rochette ......................... \\
\hline do 28...... & do ............. & do ................ & 303 & - Vezina ... ..... ....... ......... \\
\hline \(\begin{array}{ll}\text { do } & 28 . . . . . \\ \text { do } & 28 . . . \\ \end{array}\) & do &  & 304 & Leandre Roy.......................... \\
\hline do 28....... & do & do & 306 & Cyrill Labrecque .................. \\
\hline Nov. 25...... & do ............. & do ................ & 329
330 & - Vegina ...................... \\
\hline \begin{tabular}{cc} 
do \\
Dee. & \(25 . . . . . .\). \\
\hline
\end{tabular} & do \(\begin{aligned} & \text { do } \\ & \text { do }\end{aligned}\) &  & 330
337 & - Los. Guay ............................ \\
\hline do 6...... & do ............. & do ..................... & 338 & Pierre Guay ....................... \\
\hline do 28...... & do & do .................. & 345
346 & - Cathcart ..................... \\
\hline \(\begin{array}{ll}\text { do } & 28 . . . . . \\ \text { do } & \\ \text { d }\end{array}\) & do . ............. & do ................ & 346
347 & P. Bourget ....................... \\
\hline \(\begin{array}{ll}\text { do } & 28 . . . . \\ \text { do } & 28 . . . \\ \end{array}\) & do \({ }^{\text {do }}\)................ & do ..................... & 347
348 & - Mabrecque ......................... \\
\hline \(\begin{array}{ll}\text { do } & 28 . . . . . \\ \text { do } & 28 . . .\end{array}\) & do \({ }^{\text {do }}\)............. & do ................ & 349
350 & P. Guay.......................... \\
\hline do 28...... & do ............ & do ................ & 350 & - Gilbert ......................... \\
\hline
\end{tabular}

Tabulated Statement, \&c.-Continued.
Continued.
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{7}{|c|}{Results of Analysis.} & \multirow{4}{*}{Remarks by the Analyst.} \\
\hline \multicolumn{6}{|c|}{Contained in 100 parts.} &  & \\
\hline \multirow{2}{*}{Butter Fat.} & \multirow{2}{*}{Caseine.} & \multirow[t]{2}{*}{Sugar and Salts.} & \multirow{2}{*}{Ash.} & Tot & & 氙.N. & \\
\hline & & & & Solids. & Water. &  & \\
\hline \(2 \cdot 56\) & \(8 \cdot 51\) & & -59 & 11.66 & 88.34 & & Water has been added, and quality of \\
\hline 3.24 & \multirow[t]{2}{*}{\(8 \cdot 42\)} & & -69 & 12.35 & 8765 & \(7 \cdot 50\) & Fair quantity of cream; less water than \\
\hline \multirow{3}{*}{2.69
3.26} & & & & & & & any previous sample. \\
\hline & 8.49 & & \(\cdot 54\) & 11.72 & 88.28 & 11.50 & The cream is deficient in this milk. \\
\hline & \multirow[t]{2}{*}{\[
\begin{array}{r}
8 \cdot 88 \\
10 \cdot 78
\end{array}
\]} & ....... & \(\cdot 66\) & 12.80 & 87.50 & 7.00 & Jnchanged, consistıng of genuine milk. \\
\hline \[
\begin{aligned}
& \mathbf{3 . 2 6} \\
& 2 \cdot 32
\end{aligned}
\] & & . ... & ...... 1 & \(13 \cdot 10\) & 86.90 & 10.00 & 28 per cent. of cream has been removed, probably by the addition of akimmed milk. \\
\hline 1.90 & \(7 \cdot 80\) & & & \(9 \cdot 70\) & \(90 \cdot 30\) & 8.00 & This is an undoubted sample of watered \\
\hline \(2 \cdot 49\) & \multirow[t]{2}{*}{\(8 \cdot 86\)} & ..... & \(\cdot 62\) & 11.97 & 88.13 & 7.00 & This cream is deficient, probably by the addition of skimmed milk. \\
\hline 1.99 & & .......... & -38 & 9.50 & 90.50 & ..... & The cream is low. \\
\hline \multirow[t]{2}{*}{\begin{tabular}{l}
2.05 \\
3.20 \\
\hline
\end{tabular}} & \[
\begin{aligned}
& 7 \cdot 13 \\
& 9 \cdot 17
\end{aligned}
\] & ...... & -62 & 11.84 & 88.16 & & Some of the cream has been removed. \\
\hline & \[
\begin{aligned}
& 9 \cdot 17 \\
& 5 \cdot 50
\end{aligned}
\] & \(4 \cdot 90\) & 1.80 & \(15 \cdot 40\) & 84.60 & ........... & Not adulterated. \\
\hline 3.20
3.00 & \begin{tabular}{l}
\(5 \cdot 50\) \\
\(3 \cdot 06\) \\
\hline
\end{tabular} & \(4 \cdot 84\) & 0.90 & 11.80 & 88.20 & .............. & do \\
\hline \multirow[t]{2}{*}{0.50
2.60} & \(9 \cdot 50\) & \(3 \cdot 80\) & 0.80 & 14.60 & 85.40 & 1.50 & Evidently skimmed milk before sale. \\
\hline & 6.90 & \(4 \cdot 60\) & \(0 \cdot 90\) & 15.80 & 85.00 & 6.00 & Just within the limits. \\
\hline \(2 \cdot 60\)
4.00 & \(7 \cdot 00\) & \(4 \cdot 60\) & \(0 \cdot 40\) & 16.00 & 84.00 & 10.00 & Not adulterated. \\
\hline \begin{tabular}{l}
4.00 \\
4.00 \\
\hline
\end{tabular} & \(2 \cdot 50\) & 5.00 & 0.50 & 12.00 & 88.00 & 8.00 & do \\
\hline 4.50
2.40 & \multirow[t]{2}{*}{6.92
5.96} & 3.00 & 0.58 & 15.00 & 85.00 & 17.00 & \\
\hline \(2 \cdot 40\) & & \(2 \cdot 30\) & \(0 \cdot 34\) & 11.00 & 89.00 & 11.00 & \\
\hline 1.20 & \multirow[t]{2}{*}{9.20
8.04} & \(5 \cdot 60\) & 0.12 & 16.12 & 83.88 & 5.00 & Skimmed. \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& 0.50 \\
& 4.00
\end{aligned}
\]} & & \(6 \cdot 10\) & \(0 \cdot 36\) & 15.00 & 8500 & traces & do \\
\hline & 8.04
4.00 & \(5 \cdot 02\)
8.40 & 0.30
0.40 & 13.50 & 86.50 & 12.00 & \\
\hline 4.00
0.80 & 4.00
7.00 & 8.40
8.20 & 0.40
0.50 & 16.60
18.78 & 83.40
81.30 & 1.50
1.00 & Skimmed milk. \\
\hline 3.00 & \(6 \cdot 90\) & 8.20
8.00 & 0.30 & 18.78
18.20 & 81.30
81.80 & 1.00 & \\
\hline \multirow[t]{2}{*}{2.90
3.00} & \multirow[t]{2}{*}{3.00
6.40} & \(5 \cdot 60\) & 0.30
0.40 & 11.80
14.80 & 88.20 & ............ & \\
\hline & & 5.00 & \(0 \cdot 40\) & 14.80 & \(85 \cdot 20\) & ........ & \\
\hline
\end{tabular}
APPENDIX IV.-INSPECTION OF FOOD.—Tabulated Statement, \&c.-Continued.

APPENDIX IV.-INSPECTION OF FOOD.-Tabulated Statement, \&c.-Continued.
\begin{tabular}{|c|c|c|c|c|c|}
\hline Date. & Name of Anslyst. & Division. & No. of Analyst's Report. & Vendor. & Result of Analysis, and Remarks by the Analyst. \\
\hline 1876. & & & & & \\
\hline \[
\text { June } 2 \ldots
\] & W. H. Ellis .................. & Toronto............ & 202 & J. Shields & Sugar mice consists of sugar and starch, flavoured with cinnamon and chocolate. \\
\hline do \(2 \ldots\) & & do & 204 & do ........................ & Conversation lozenges consist of sugar and starch, flavoured with peppermint flavouring. \\
\hline do \(2 \ldots\) & do ................. & do & 205 & do ........................ & French creams consist of sugar and starch, flavoured with chocolate and other harmless material. \\
\hline \({ }_{\text {do }} \mathrm{do}\)... & do ................. & do & 206 & do ........................ & Chrystalized fig paste consists of gum of Fragacaulta, flavoured with sugar and fruit essence. \\
\hline do 2... & & do & 207 & do & Imperiale consista of sugar with a little starch, flavoured with cinnamon. \\
\hline do 13... & do ................. & do & 208 & do ........................ & Fruit slice consists of sugar, flavoured to imitate fruit, and containing nothing injurious to health. \\
\hline do 13... & do & do ........... & 209 & do ....................... & French lozenges consist of sugar and starch, variously coloured and flavoured. \\
\hline do 13... & do & do ........... & 210 & Hooper \& Co & Lozenges containing balsam of Tolu, sugar and gum arabic. \\
\hline do 13... & & do & 211 & do .................... & Lozenges made of sugar, ginger and gum arabic. \\
\hline do 13... & do & do & 212 & do ..................... & Lozenges made of sugar, starch and peppermint. \\
\hline do 13... & & & 215 & do ..................... & Lozenges, compound of sugar, starch and nitrate of potassium. \\
\hline do 13... & de .................. & do ............ & 216 & do .................... & do do and gelatine. \({ }_{\text {do }}\) do ath a litle starch, flavoured \\
\hline do 13... & do ................. & do ........... & 217 & G. Coleman ..................... & do do with a little slarch, flavoured \\
\hline do 13... & & & 218 & do & French creams do and corn starch. \\
\hline \(\begin{array}{ll}\text { do } & 13 . . \\ \text { do } & 17 \ldots\end{array}\) & J. Baker Edwarde & \(\xrightarrow{\text { Montreal }}\) & 219
101 & do .................... & Pan goods (lozenges), compound of sugar and starch. \\
\hline  & & & & & Corn, mixed with saccharine matter, and contains nothing injurious to health. \\
\hline do 17... & do .......... & do ........... & 102 & Wilson \& Co.. ............ ....... & Cocoa confection, a contection composed of pounded cocoa nut and cane sugar, some portions being coloured with cochineal. Contains nothing injurious to heulth. \\
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APPENDIX IV.-INSPECTION OF FOOD.-Tabulated Statement, \&c.-Continued. SWEETS.-Continued.

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APPENDIX IV.-INSPECTION OF FOOD.-Tabulated Statement, \&c.-Continued.
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[^0]:    Railway in the County Statement of accidents which have occurred on the Intercolonial Railway in the County of Northumberland-the number of cattle killed-with the causes of such accidents - with a list of claims and amounts paid. [Not printed.]

[^1]:    tickets, at each Station of the Intercolonial Railway for a period of eighteen months preceding the 31st December last. [Not printed.]

[^2]:    December 30th, 1876.

[^3]:    * The Spirit Indicatcn required in the Schedule will in this case be $9 \cdot 04$, the decimal point being mo ved three places to the right to meet the technical usages of the trade.

[^4]:    * Thone printed in italics were Examiners under Act of 1873.

[^5]:    Noty.-The candidate is required to take a memorandum of the results of these computations, in Order that he may enter them as the actual stock on hand after writing up the Grain Stock Book, which Will be the subject of a succeeding paper.

[^6]:    The Candidate is required, from the information afforded by this paper, to write up Stock Books Nos. 1 and 2, and Daily Record, and make out S. M. Return and Form G. 8 .

[^7]:    Inland Revenue Department，
    Ottawa，31st July， 1876.

[^8]:    Inland_Revenue Department
    Ottawa, 31st July, 1876.

[^9]:    1875.-Total Excise Duty collected on Spirits Ex-Manufactory and Ex-Warehouse
    \$2,972,971 47 4,25000
    \$2,977,221 47

[^10]:    Inland Revenue Otepartment, 31st July, 1876.

[^11]:    Total for year 1875
    356,992 90
    do 1876, exclusive of Newcastle Works.
    369,886 14

[^12]:    25. None of the changes necessary for effecting all that is implied by the above, require any amendment of the law. They may to amend la in order to give effect to those views.
    Not necessary
[^13]:    139. The Department has no means of knowing how many meters Number are condemned when taken out of use by the Gias Companies and no inspected. opinion, therefore, can be adranced on that point. Full details as to the inspection of meters will be found in appendix VIII.
[^14]:    $a, b$. 2 Sets of Standard Troy Weights, each eet consisting of $500,300,200,100,50,30,20,10,5,3,2,1, .05, .03, .02, .01, .005$, .003, .002, . 001 ounces.

[^15]:    4. The divisions on the long arm of the lever are equal among themselves.
[^16]:    *See special instructions as to this paragraph.

[^17]:    Note to Dragram. - The small gas dial being divided into-12ths, 12 is added to the unit 8 before substraction is made.

