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# SESSIONAL PAPERS

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FOURTH SESSION OF THE EIGHTH PARLIAMENT

OF THE

DOMINION OF CANADA

54161

SESSION 1899



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(This volume is bound in two parts.)

1. Report of the Auditor General, for the year ended 30th June, 1898. Presented (in part) 7th April, 1899, by Hon. W. S. Fielding. Presented, complete, 26th April, 1900.  
*Printed for both distribution and sessional papers.*

### CONTENTS OF VOLUME 2.

2. Public Accounts of Canada, for the fiscal year ended 30th June, 1898. Presented 23rd March, 1899, by Hon. W. S. Fielding. . . . .*Printed for both distribution and sessional papers.*
- 2a. Estimates of sums required for the service of Canada, for the year ending on the 30th June, 1900. Presented 24th April, 1899, by Hon. W. S. Fielding.  
*Printed for both distribution and sessional papers.*
- 2b. Supplementary Estimates for the year ending 30th June, 1899. Presented 12th June, 1899, by Hon. W. S. Fielding. . . . .*Printed for both distribution and sessional papers.*
- 2c. Supplementary Estimates for the year ending 30th June, 1900. Presented 18th July, 1899, by Hon. W. S. Fielding. . . . .*Printed for both distribution and sessional papers.*
- 2c. Further Supplementary Estimates for the year ending 30th June, 1900. Presented 7th August, 1899, by Hon. W. S. Fielding. . . . .*Printed for both distribution and sessional papers.*
3. List of Shareholders of the Chartered Banks of the Dominion of Canada, as on 31st December, 1898. Presented 30th March, 1899, by Hon. W. S. Fielding.  
*Printed for both distribution and sessional papers.*
- 3a. Report of dividends remaining unpaid, and unclaimed balances in the Chartered Banks of Canada, for five years and upwards, prior to 31st December, 1898. Presented 12th April, 1899, by Hon. W. S. Fielding. . . . .*Printed for both distribution and sessional papers.*

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4. Report of the Superintendent of Insurance, for the year ended 31st December, 1898.  
*Printed for both distribution and sessional papers.*
- 4a. Preliminary Statements of the business of Life Insurance Companies in Canada, for the year ended 31st December, 1898. Presented 10th April, 1899, by Hon. W. S. Fielding.  
*Printed for both distribution and sessional papers.*
- 4b. Abstract of Statements of Insurance Companies in Canada, for the year ended 31st December, 1898. Presented 25th May, 1899, by Hon. W. S. Fielding.  
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5. Report of the Department of Trade and Commerce, for the fiscal year ended 30th June, 1898. Presented 19th April, 1899, by Sir Richard Cartwright.  
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- 5a. Special Report on Trade between Canada and the United States; for use of the International Commission, Quebec; August, 1898. . . . . *Printed for both distribution and sessional papers.*

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6. Tables of the Trade and Navigation of Canada, for the fiscal year ended 30th June, 1898. Presented 20th March, 1899, by Hon. W. Paterson. *Printed for both distribution and sessional papers.*

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7. Inland Revenues of Canada. Excise, etc., for the fiscal year ended 30th June, 1898. Presented 21st March, 1899, by Sir Henri Joly de Lotbinière.  
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- 7a. Inspection of Weights, Measures, Gas and Electric Light, for the fiscal year ended 30th June, 1898. Presented 21st March, 1899, by Sir Henri Joly de Lotbinière.  
*Printed for both distribution and sessional papers.*
- 7b. Report on Adulteration of Food, for the fiscal year ended 30th June, 1898. Presented 21st March, 1899, by Sir Henri Joly de Lotbinière. . . . . *Printed for both distribution and sessional papers.*
8. Report of the Minister of Agriculture, for the year ended 31st October, 1898. Presented 11th April, 1899, by Hon. S. A. Fisher. . . . . *Printed for both distribution and sessional papers.*
- 8a. Report on Canadian Archives, 1898. Presented 1st June, 1899, by Hon. S. A. Fisher.  
*Printed for both distribution and sessional papers.*

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- 8b. Report of the Director and Officers of the Experimental Farms, for the year 1898. Presented 15th May, 1899, by Hon. S. A. Fisher . . . . . *Printed for both distribution and sessional papers.*
- 8c. Criminal Statistics for the year 1898. . . . . *Printed for both distribution and sessional papers.*

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9. Annual Report of the Minister of Public Works, for the fiscal year ended 30th June, 1898. Presented 27th June, 1899, by Hon. W. S. Fielding. *Printed for both distribution and sessional papers.*
10. Annual Report of the Department of Railways and Canals, for the fiscal year ended 30th June, 1898. Presented 23rd March, 1899, by Hon. A. G. Blair.  
*Printed for both distribution and sessional papers.*

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11. Annual Report of the Department of Marine and Fisheries (Marine), for the fiscal year ended 30th June, 1898. Presented 7th April, 1899, by Sir Louis Davies.  
*Printed for both distribution and sessional papers.*
- 11\*. Report of the Commissioners appointed under the Order in Council of the 11th January, 1898, to inquire into the alleged grievances of the Pilots of the district of Montreal, etc.  
*Printed for both distribution and sessional papers.*
- 11†. First Annual Report of the Geographic Board of Canada, 1898.  
*Printed for both distribution and sessional papers.*
- 11a. Annual Report of the Department of Marine and Fisheries (Fisheries), for the fiscal year ended 30th June, 1898. Presented 30th March, 1899, by Sir Louis Davies.  
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*Printed for both distribution and sessional papers.*
- 11c. Report of the Canadian Lobster Commission, 1898. Presented 29th June, 1899, by Sir Louis Davies.  
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- 11d. Report of Harbour Commissioners, &c., 1898. . . . . *Printed for both distribution and sessional papers.*
12. Report of the Postmaster General, for the year ended 30th June, 1898. Presented 22nd March, 1899, by Hon. W. Mulock. . . . . *Printed for both distribution and sessional papers.*

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13. Annual Report of the Department of the Interior, for the year 1898. Presented 15th May, 1899, by Hon. C. Sifton . . . . . *Printed for both distribution and sessional papers.*
- 13a. Summary Report of the Geological Survey Department, for the year 1898. Presented 24th April, 1899, by Hon. C. Sifton . . . . . *Printed for both distribution and sessional papers.*

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15. Report of the Commissioner of the North-West Mounted Police Force, 1898. Presented 14th June, 1899, by Sir Wilfrid Laurier. . . . . *Printed for both distribution and sessional papers.*

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16. Report of the Secretary of State of Canada, for the year ended 31st December, 1898. Presented 27th March, by Sir Wilfrid Laurier. . . . . *Printed for both distribution and sessional papers.*
- 16a. Civil Service List of Canada, 1898. Presented 27th March, 1899, by Sir Wilfrid Laurier.  
*Printed for both distribution and sessional papers.*
- 16b. Annual Report of the Department of Public Printing and Stationery, for the year ended 30th June, 1898. Presented 10th April, 1899, by Hon. Sir Wilfrid Laurier.  
*Printed for both distribution and sessional papers.*
- 16c. Report of the Board of Civil Service Examiners, for the year ended 31st December, 1898. Presented 2nd May, 1899, by Sir Wilfrid Laurier. . . . . *Printed for both distribution and sessional papers.*
17. Report of the Joint Librarians of Parliament, for the year 1898. Presented 16th March, 1899, by the Hon. The Speaker. . . . . *Printed for both distribution and sessional papers.*
18. Report of the Minister of Justice as to Penitentiaries of Canada, for the year ended 30th June, 1898. Presented 21st June, 1899, by Hon. C. Fitzpatrick.  
*Printed for both distribution and sessional papers.*
19. Report of the Department of Militia and Defence of Canada, for the year ended 31st December, 1898. Presented 27th March, 1899, by Hon. F. W. Borden.  
*Printed for both distribution and sessional papers.*

## CONTENTS OF VOLUME 14.

20. Report on the Prohibition Plebiscite held on the 29th day of September, 1898, in Canada. Presented 24th April, 1899, by Sir Wilfrid Laurier. . . . . *Printed for both distribution and sessional papers.*
21. Return to an order of the House of Commons, dated 21st April, 1897, for copies of all letters, correspondence, petitions, etc., relating to the dismissal of David Ross as postmaster at Kinross, in the province of Prince Edward Island. Presented 21st March, 1899.—*Mr. Martin. . . . . Not printed.*
- 21a. Return to an order of the House of Commons, dated 21st April, 1897, for copies of all correspondence, papers, petitions, etc., in connection with the dismissal of the late postmaster at Little Sands, province of Prince Edward Island. Presented 21st March, 1899.—*Mr. Martin.*

*Not printed.*

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 CONTENTS OF VOLUME 14—*Continued.*

- 21b.** Return to an order of the House of Commons, dated 21st April, 1897, for copies of all papers, correspondence, petitions, evidence, reports and documents of every nature connected with the dismissal of J. H. Crépeau as postmaster at St. Camille, county of Wolfe, province of Quebec. Presented 21st March, 1899.—*Mr. Ives*..... *Not printed.*
- 21c.** Return to an address of the House of Commons, dated 18th April, 1898, for a return giving: (a) The names of employees relieved from duty by the government by dismissal or otherwise in the Montreal custom-house from 13th July, 1896, to 1st March, 1898. (b) The years of service of each employee so relieved of duty. (c) The amount of retiring allowance, if any. (d) The cause of dismissal in each case. (e) The amount of pay per annum of such employee at date of dismissal. (f) The names of new employees appointed, whether permanently or temporarily, from 13th July, 1896, to 1st March, 1898. (g) The amount to be paid to each such new temporary or permanent employee per month. Presented 2nd May, 1899.—*Mr. Quinn*..... *Not printed.*
- 21d.** Return to an order of the House of Commons, dated 2nd May, 1898, for a return showing the names of all employees on the Lachine canal and St. Ann lock dismissed from the public service since the 23rd day of June, 1896, the cause of dismissal, the name of complainant in each case, the amount of salary paid to the dismissed official, the name and salary paid to his successor in office. Presented 17th May, 1899.—*Mr. Monk*..... *Not printed.*
- 21e.** Return to an address of the House of Commons, dated 14th March, 1898, for copies of all orders in council, papers, depositions, reports, evidence, correspondence and documents in relation or reference to any charges made against Peter S. Archibald, lately chief engineer of the Intercolonial Railway, or to the dismissal of the said Peter S. Archibald from his position or office as such chief engineer, or the grounds or reasons for such dismissal, or in relation or reference to any claim of the said Peter S. Archibald for superannuation allowance or otherwise in relation or reference to the retirement or dismissal of the said Peter S. Archibald from the service of the Intercolonial Railway. Presented 25th May, 1899.—*Mr. Borden (Halifax)*..... *Not printed.*
- 21f.** Return to an order of the House of Commons, dated 7th June, 1897, for a return of all correspondence, reports and papers in connection with the dismissal of Mr. Wm. Bateman of Port Perry from, and the appointment of Mr. Williams to, the position of agent to the Scugog Island Indians. Presented 29th May, 1899.—*Mr. Hughes*..... *Not printed.*
- 21g.** Return to an order of the House of Commons, dated 26th April, 1899, for a statement of all persons or commissions of inquiry appointed to inquire into the conduct of employees of the government since August 1st, 1896, giving the names of commissioners, their rate of pay and allowances, the aggregate total amount paid to each as pay and allowance, and the total expenses of each commission outside of pay and allowance; also the names and post office addresses of all persons dismissed on the reports of the commissioners (Inland Revenue). Presented 31st May, 1899.—*Mr. Foster*.  
*Not printed.*
- 21h.** Return to an order of the House of Commons, dated 1st May, 1899, for copies of all papers, documents and correspondence in connection with the dismissal of D. W. Ball from being postmaster at the village of Bath, Ontario. Presented 2nd June, 1899.—*Mr. Wilson*..... *Not printed.*
- 21i.** Return to an order of the House of Commons, dated 10th May, 1899, for copies of the report of Mr. Hawkins, post office inspector, in reference to the inquiry or investigation held on the conduct of J. R. Leake, postmaster of Morton, in the county of Leeds, together with copies of all correspondence, complaints, affidavits or declarations and evidence taken at the investigation relating to said postmaster; together with a copy of the notice of his dismissal. Presented 2nd June, 1899.—*Mr. Taylor*..... *Not printed.*
- 21j.** Return to an order of the House of Commons, dated 5th June, 1899, for copy of correspondence, etc., relating to the dismissal of Mr. Alfred Lenoir, as fishery overseer at Isle Madame, in the county of Richmond, Nova Scotia. Presented 5th June, 1899.—*Sir Louis Davies*..... *Not printed.*
- 21k.** Return to an address of the House of Commons, dated 17th May, 1899, for copies of all orders in council respecting the appointment and dismissal of Mr. Russell, inspector of steamboats; copies of all reports and evidence touching an inquiry into his conduct; also of all reports, papers and correspondence respecting his last appointment or reinstatement to the public service; also all communications from, to or concerning this officer since he has been discharging duties in the Yukon district. Presented 6th June, 1899.—*Sir C. Hibbert Tupper*..... *Not printed.*

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- 21l. Return to an order of the House of Commons, dated 1st May, 1899, for copies of all petitions, correspondence, letters or documents in relation to the following dismissals: Job Bilodeau, postmaster of Chambord; Louis Desbiens, postmaster of St. Jérôme; William Larouche, postmaster of Lake Bouchette; Ferdinand Larouche, postmaster of Delisle; F. X. Letourneau, postmaster of St. Bruno, all in the county of Chicoutimi; together with all petitions, correspondence, letters or documents in relation to the appointment of their successors. Presented 13th June, 1899.—*Mr. Casgrain.*  
*Not printed.*
- 21m. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all papers and correspondence in reference to the dismissal of Christopher Walker, postmaster of Ailsa Craig, Ontario, with copies of charges, if any, made against such officer and report of any investigation held. Presented 13th June, 1899.—*Mr. Haggart.* . . . . . *Not printed.*
- 21n. Return to an order of the House of Commons, dated 14th March, 1898, for copies of all correspondence, inspector's reports, and all documents respecting the dismissal of the postmaster at Agnes and the removal of the office. Presented 13th June, 1899.—*Mr. Pope.* . . . . . *Not printed.*
- 21o. Return to an order of the House of Commons, dated 14th June, 1899, for copies of correspondence and other papers in regard to the dismissal of Mr. Joseph McNeil, light-keeper, Jerome Point, St. Peter's, Cape Breton. Presented 14th June, 1899.—*Sir Louis Davies.* . . . . . *Not printed.*
- 21p. Return to an address of the Senate, dated 12th April, 1899, for copies of the complaints and all correspondence relating thereto, which led to the dismissal of Mr. Freeman Ketcheson from the position of post office mail clerk, including the statement or statements of the said Freeman Ketcheson in reply to said complaints. Presented 15th June, 1899.—*Hon. Sir Mackenzie Bowell.*  
*Not printed.*
- 21q. Return to an address of the House of Commons, dated 30th March, 1898, for copies of all orders in council, papers, depositions, reports, documents, etc., in relation to the dismissal of Napoléon Alain as postmaster of L'Ancienne Lorette, and also copies of all instructions given by the department of the postmaster general or any officers thereof, to the post office inspector in Quebec, or to any other officer thereof in relation to the giving of evidence in an action by the said Napoléon Alain *versus* one Frederic Belleau for damages. Presented 19th June, 1899.—*Mr. Casgrain.*  
*Not printed.*
- 21r. Return to an order of the House of Commons, dated 24th April, 1899, for copies of all papers connected with the dismissal of Boaz Gross, late harbour master of Hillsboro', N.B., and with the appointment of his successor, including copies of all charges and complaints, the evidence taken by Commissioner McAlpine, the commissioner's report, and all correspondence, recommendations and other papers in any way relating to the said dismissal and the subsequent appointment. Presented 26th June, 1899.—*Mr. McInerney.* . . . . . *Not printed.*
- 21s. Return to an order of the House of Commons, dated 8th May, 1899, for copies of all reports, correspondence and other papers connected with the dismissal of Mr. Fairlie, principal of the Rupert's Land industrial school, in the province of Manitoba. Presented 28th June, 1899.—*Mr. Bourassa.*  
*Not printed.*
- 21t. Return to an order of the House of Commons, dated 19th June, 1899, for copies of all papers, documents and correspondence in connection with the dismissal of John Hems, caretaker of the public building in the town of Napanee. Presented 4th July, 1899.—*Mr. Wilson.* . . . . . *Not printed.*
- 21u. Return to an address of the House of Commons, dated 8th May, 1899, for a copy of the commission issued to investigate into the charges made against W. A. Hogg, landing-waiter at the port of Collingwood, the evidence taken by the said commission, the report made by the commission, the order in council made thereon, and all correspondence and papers in connection therewith. Presented 25th July, 1899.—*Mr. McCarthy.* . . . . . *Not printed.*
- 21v. Return to an order of the House of Commons, dated 26th July, 1899, for copy of the report of Thomas Woodyatt, commissioner, relative to certain charges made against John Galna, of Her Majesty's customs at Parry Sound, Ontario. Presented 26th July, 1899.—*Mr. Paterson.*  
*Not printed.*
- 21w. Return to an order of the House of Commons, dated 26th July, 1899, for copy of report, etc., in connection with the suspension of Wm. Caldwell, preventive officer of customs at Anderdon, Ontario. Presented 26th July, 1899.—*Mr. Paterson.* . . . . . *Not printed.*
- 21z. Return to an order of the House of Commons, dated 29th July, 1899, for copy of the report of M. B. Colcock, assistant inspector of ports, relative to the preventive station at Anderdon, and to William Caldwell, late preventive officer thereat. Presented 29th July, 1899.—*Hon. W. Paterson.*  
*Not printed.*

CONTENTS OF VOLUME 14—*Continued.*

- 21*y.* Return to an order of the House of Commons, dated 26th June, 1899, for copies of all correspondence had with the department of railways and canals, or with any member of the government, in connection with the cases of Pierre Michaud and Fred. Belanger, porter and track foreman, respectively, on the Intercolonial Railway at Trois Pistoles, and dismissed therefrom in 1898, and for all petitions and papers in regard thereto. Presented 8th August, 1899.—*Mr. Foster.*  
*Not printed.*
- 21*z.* Return to an order of the House of Commons, dated 12th June, 1899, for copies of all correspondence, telegrams, petitions, reports and all other papers in connection with the dismissal of Mr. William D. McMillan as light-keeper at Wood Islands, in the province of Prince Edward Island, and the appointment of his successor. Presented 10th August, 1899.—*Mr. Martin.*  
*Not printed.*
22. Return to an order of the House of Commons, dated 10th May, 1897, for copies of all petitions, letters, notices, correspondence, bonds and papers in relation to the establishment of a post office in the county of Annapolis called "Virginia," and the appointment of Mr. Ezekiel Banks as postmaster for such office. Presented 21st March, 1899.—*Mr. Mills.* . . . . . *Not printed.*
- 22*a.* Return to an order of the House of Commons, dated 10th May, 1897, for copies of all petitions, letters, notices, bonds, papers and documents in relation to the establishment of a post office in the county of Annapolis called "North Perott," and the appointment of Mr. Alfred Spurr to the postmastership of said office. Presented 21st March, 1899.—*Mr. Mills.* . . . . . *Not printed.*
- 22*b.* Return to an order of the House of Commons, dated 3rd May, 1897, for copies of all correspondence in connection with the appointment and installation of George G. King to the postmastership of Marsh Hill, Ontario, had with any member of the government, or any officer of the post office department. Presented 21st March, 1899.—*Mr. Foster.* . . . . . *Not printed.*
23. Return of Treasury Board Over-Rulings of Auditor General's decisions between the beginning of the session of 1898 and the session of 1899. Presented 21st March, 1899, by Hon. W. S. Fielding.  
*Not printed.*
24. Statement of Governor General's Warrants issued since last session of parliament, on account of the fiscal year 1898-99. Presented 21st March, 1899, by Hon. W. S. Fielding. . . . . *Not printed.*
25. Statement of expenditure on account of miscellaneous unforeseen expenses from 1st July, 1898, to 16th March, 1899. Presented 23rd March, 1899, by Hon. W. S. Fielding. . . . . *Not printed.*
26. Report of the Commissioner, Dominion Police Force, for the year 1898. Presented 27th March, 1899, by Sir Wilfrid Laurier. . . . . *Not printed.*
27. Copy of an order in council relative to the issue of licenses to United States fishing vessels. Presented 30th March, 1899, by Sir Louis Davies. . . . . *Not printed.*
28. Return showing reductions and remissions made under section 141 as added to the Indian Act by section 8, chapter 35, 58-59 Victoria. Presented 30th March, 1899, by Hon. C. Sifton.  
*Not printed.*
29. Statement in pursuance of section 17 of the Civil Service Insurance Act, for the year ending 30th June, 1898. Presented 30th March, 1899, by Hon. W. S. Fielding. . . . . *Printed for sessional papers.*
30. Statement of all superannuation and retiring allowances in the civil service during year ended 31st December, 1898, showing name, rank, salary, service and cause of retirement of each person superannuated or retired, also whether vacancy filled by promotion or new appointment, and salary of any new appointee. Presented 30th March, 1899, by Hon. W. S. Fielding.  
*Printed for sessional papers.*
- 30*a.* Return to an address of the House of Commons, dated 14th February, 1898, for a return giving: (a) The names of all civil servants who have been superannuated between the 13th of July, 1896, and the 1st of February, 1898. (b) The age of each servant so superannuated. (c) The years of service of each person so superannuated. (d) The amount per annum each person had been in receipt of. (e) The amount of superannuation each person is to receive per annum. (f) The name of the new appointees in the civil service since said 13th of July. (g) The age of each such new appointee. (h) The amount to be paid to each such new appointee. Presented 14th June, 1899.—*Mr. Taylor.* . . . . . *Not printed.*
- 30*b.* Return to an order of the House of Commons, dated 29th May, 1899, showing: (a) The superannuations made in the department of agriculture from 30th June, 1896, to 30th April, 1899, in both the inside and outside services. (b) The retiring allowances in each case. (c) The manner in which the vacancies thus created have been filled, with names of persons appointed to such vacancies and amounts of salary in each case. Presented 30th June, 1899.—*Mr. Montague.*  
*Not printed.*

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31. Detailed statement of all bonds and securities registered in the department of the secretary of state of Canada, since the last return, 16th February, 1898, submitted to parliament in accordance with section 23 of chapter 19 of the Revised Statutes of Canada. Presented 30th March, 1899, by Sir Wilfrid Laurier..... *Not printed.*
32. Statement in reference to fishing bounty expenditure for 1897-98. Presented 4th April, 1899, by Sir Louis Davies..... *Not printed.*
33. Return to an order of the House of Commons, dated 5th April, 1899, for copies of papers in connection with the case of Nelson vs. Donnelly, being an appeal from the decision of the gold commissioner at Dawson city. Presented 5th April, 1899.—*Hon. C. Sifton*..... *Not printed.*
34. Return to an order of the House of Commons, dated 18th April, 1898, for copies of all reports and recommendations from the inspectors of cavalry, artillery and infantry on their inspections up to April 18th, for the financial year 1897-98. Presented 10th April, 1899.—*Mr. Hughes*..... *Not printed.*
35. Statement of the affairs of the British Canadian Loan and Investment Company, as on the 31st December, 1898. Presented (Senate) 21st March, 1899, by the Hon. The Speaker..... *Not printed.*
36. Return of orders in council relating to Dominion lands in the provinces of Manitoba and British Columbia, and in the North-west Territories. Presented (Senate) 11th April, 1899, by Hon. R. W. Scott..... *Not printed.*
37. Commission appointing William Ogilvie, Esq., a commissioner under chapter 114, Revised Statutes of Canada, to inquire into and report upon charges preferred against many government officials in the Yukon territory. Presented 17th April, 1899, by Hon. C. Sifton..... *Not printed.*
38. Return prepared by the clerk of the crown in chancery in obedience to an order of the House of Commons, dated 10th May, 1899, for copies of the poll-books and voters' lists for the counties of Beauce, Lévis, Montmagny and Kamouraska, used at the plebiscite vote. Presented 13th July, 1899, by The Deputy Speaker..... *Not printed.*
39. Return to an address of the House of Commons, dated 14th March, 1898, for a return showing in detail the extent of all gold dredging leases applied for and granted in the North-west Territories and the Yukon, where situated, the names and post office addresses of the applicants, and amount paid therefor; also all correspondence and orders in council in connection therewith. Presented 19th April, 1899.—*Mr. Foster*..... *Not printed.*
40. Supplementary return to an address of the House of Commons, dated 14th February, 1898, for copies of all correspondence, advertisements for tenders and answers thereto, reports and orders in council, and a list of all permits, licenses or leases granted, containing names of the grantees and extent of territory given and conditions attached to each, the amount paid and to be paid therefor in respect of gold placer mining or gold dredging areas in the North-west Territories and the Yukon district. Presented 15th April, 1899.—*Mr. Foster*..... *Not printed.*
41. Return of all lands sold by the Canadian Pacific Railway Company, from the 1st October, 1897, to the 1st October, 1898. Presented 19th April, 1899, by Hon. C. Sifton..... *Not printed.*
42. Return of correspondence, etc., respecting the affairs of the Canadian Pacific Railway Company, which the department of the interior has had since the previous return was presented to parliament under the resolution of the 20th February, 1882. Presented 19th April, 1899, by Hon. C. Sifton..... *Not printed.*
43. Return of orders in council which have been published in the *Canada Gazette* and in the *British Columbia Gazette*, in accordance with the provisions of sub section (d) of section 38 of the regulations for the survey, administration, disposal and management of Dominion lands within the 40-mile railway belt in the province of British Columbia. Presented 19th April, 1899, by Hon. C. Sifton..... *Not printed.*
44. Return of orders in council which have been published in the *Canada Gazette*, in accordance with the provisions of section 46, the North-west Irrigation Act, being 57-58 Victoria, chapter 30, etc. Presented 19th April, 1899, by Hon. C. Sifton..... *Not printed.*
45. Return of orders in council which have been published in the *Canada Gazette*, in accordance with the provisions of clause 91 of the Dominion Lands Act, chapter 54 of the Revised Statutes of Canada, and its amendments. Presented 19th April, 1899, by Hon. C. Sifton..... *Not printed.*
46. Return to an order of the House of Commons, dated 21st April, 1899, for a copy of representations of the high commissioner for Canada and the agents general of the British colonies, respecting the application of estate duty to personal property situate in the colonies in 1894. Presented 21st April, 1899.—*Sir Wilfrid Laurier*..... *Printed for sessional papers.*

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47. Return to an order of the House of Commons, dated 21st April, 1899, for a copy of the correspondence between the colonial office and the government of Canada on the subject of the island of Anticosti. Presented 21st April, 1899.—*Sir Wilfrid Laurier*. . . . . *Printed for sessional papers.*
48. Return to an address of the House of Commons, dated 18th April, 1898, for copies of all orders in council, memorials, correspondence and every other document in connection with the granting 150,000 acres of public lands in favour of the university of Manitoba, and the transfer and patenting of the same to the university. Presented 24th April, 1899.—*Mr. LaRivière*.  
*Printed (in part) for distribution and sessional papers.*
- 48a. Supplementary return to an address of the Senate, dated 31st March, 1898, for a statement of the quantity of lands allotted for school purposes in Manitoba; the quantity of said lands sold, and the prices at which they have been sold; the amount received on that account; the amounts still due to the government; the manner in which this fund is invested and administered; the amount already paid to the province of Manitoba, how much on the capital, if any, and how much on the interest; the amount still at the credit of the province, whether on the capital or on the interest; the dates of payment in each case and the amount of each payment; and also all the correspondence, papers, memoranda and orders in council relating thereto, up to date. Presented 25th April, 1899.—*Hon. Mr. Bernier*. . . . . *Not printed.*
49. Return to an order of the House of Commons, dated 19th April, 1899, for a copy of the report of the commissioners appointed in 1897 to inquire into the state of the public records and of the public buildings. Presented 1st May, 1899.—*Mr. Belcourt*. . . . . *Not printed.*
50. Order of the House of Commons, dated 19th April, 1899, for a statement of the number of sheets of notes of \$1 and \$2 delivered to the government from the 1st of August, 1897, by the new contractors, together with the number of back, tint and face plates of the above denominations, delivered to the government to date, as per the contract. Presented 1st May, 1899.—*Mr. Foster*.  
*Not printed.*
51. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all correspondence with the imperial and colonial governments, and other parties, relative to the proposed Pacific cable, since the return brought down last session; also of the report of the imperial commission on this subject, if leave has been obtained to publish it. Presented 8th May, 1899.—*Mr. Casey*.  
*Printed for both distribution and sessional papers.*
- 51a. Supplementary return to No. 51. Presented 12th May, 1899.  
*Printed for both distribution and sessional papers.*
- 51b. Return to an address of the House of Commons, dated 29th May, 1899, for copies of all orders in council and correspondence connected with and relating to the offer of the government of British Columbia, made in 1899, respecting the Pacific cable. Presented 12th June, 1899.—*Sir C. Hibbert Tupper*. . . . . *Printed for both distribution and sessional papers.*
52. Return to an address of the House of Commons, dated 30th March, 1898, for copies of all papers and correspondence respecting the enforcement of coasting laws of Canada on the Pacific or Atlantic coasts, in so far as it relates to the department of customs. Presented 8th May, 1899.—*Sir C. Hibbert Tupper*. . . . . *Printed for sessional papers.*
- 52a. Supplementary return to No. 52 (Department of the Interior). Presented 5th June, 1899.  
*Not printed.*
53. Return to an address of the House of Commons, dated 24th April, 1899, for a copy of lease of the property in Quebec known as the "Plains of Abraham," or of any other title under which the government of Canada holds said property; also of all memorials, correspondence, etc., addressed to the government on the subject of renewing said lease or otherwise acquiring the same. Presented 8th May, 1899.—*Mr. Casgrain*. . . . . *Not printed.*
54. Return to an order of the House of Commons, dated 24th April, 1899, for a return showing the expenditure for each year from 1867 to 1889, inclusive, of the militia department; also the amount in each of the above years expended for the staff of the militia; also the amount in each of the above years expended for the royal military college, Kingston. Presented 8th May, 1899.—*Mr. Domville*. . . . . *Not printed.*
55. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all correspondence, minutes of council, commission of appointment relating to the appointment of the hon. the chief justice of the province of British Columbia from the date of the decease of the Hon. Chief Justice Davie to the appointment of the present incumbent; also relating to the appointment of the Hon. Mr. Justice Irving and the Hon. Mr. Justice Martin of the supreme court of British Columbia. Presented 15th May, 1899.—*Sir Charles Tupper*. . . . . *Not printed.*

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56. Return to an address of the House of Commons, dated 26th April, 1899, for copy of lease or agreement and of all correspondence relating to the occupation of the Champ de Mars in the city of Montreal by the Montreal authorities and the condition of said occupation. Presented 9th May, 1899.—*Mr. Monk*. . . . . *Not printed.*
57. Return to an order of the House of Commons, dated 24th April, 1899, for a return showing the gross working expenses and earnings, respectively, of the Intercolonial Railway for each month from 1st July, 1898, to date. Also the gross working expenses and earnings, respectively, of the same road for the similar months of the preceding year. Presented 9th May, 1899.—*Mr. Foster*.  
*Printed for sessional papers.*
- 57a. Return to an order of the House of Commons, dated 24th April, 1899, for a return showing the total amount of revenue collected by the government (a) from passenger traffic; (b) from freight traffic at the stations, freight agencies and passenger agencies along the extension of the Intercolonial Railway from Chaudière to Montreal, both included, (1) from the 30th day of June, 1898, exclusive, to the 1st day of March, 1899, exclusive; (2) from the 1st day of March, 1899, inclusive, to the 1st day of April, 1899, exclusive. Presented 16th May, 1899.—*Mr. Powell*.  
*Printed for sessional papers.*
- 57b. Return to an order of the House of Commons, dated 18th April, 1898, for a return containing a statement of expenditure out of income made for permanent improvements, extensions, additions and betterments, exclusive of works for ordinary maintenance and renewals, on account of the Intercolonial Railway from 30th June, 1891, to 1st July, 1897. Presented 17th May, 1899.—*Mr. Powell*. . . . . *Printed for sessional papers.*
- 57c. Return to an order of the House of Commons, dated 18th April, 1898, for copies of all tenders for ties for the use of the Intercolonial Railway from 1st January, 1896, to date, giving names, quantities, prices, and which tenders were accepted. Presented 17th May, 1899.—*Mr. Foster*.  
*Not printed.*
- 57d. Return to an order of the House of Commons, dated 30th March, 1898, for copies of all tenders received by the government, or by the department of railways and canals, or by any officials thereof, for railway ties and lumber of all kinds supplied to the Intercolonial Railway between July, 1896, and January, 1898, on the division of the railway in the province of Quebec. Presented 17th May, 1899.—*Mr. Casgrain*. . . . . *Not printed.*
- 57e. Return to an address of the Senate, dated 24th March, 1899, for a statement showing the quantity of rolling stock purchased in connection with the extension of the Intercolonial Railway from Lévis to Montreal, from whom purchased, and the price paid therefor. Presented 19th May, 1899.—*Hon. Sir Mackenzie Bowell*. . . . . *Not printed.*
- 57f. Return to an address of the Senate, dated 25th April, 1899, for a return showing quantity of freight carried over the Intercolonial Railway from Montreal to Halifax for shipment to Europe, during the winter 1898 and 1899. Presented 29th May, 1899.—*Hon. Mr. Perley*.  
*Printed for sessional papers.*
- 57g. Return to an order of the House of Commons, dated 8th May, 1899, for a return showing: 1. The total amount of expenditure on capital account in connection with the Intercolonial Railway and the extension thereof to Montreal from 30th June, 1898, exclusive, to the 1st day of May, 1899, exclusive. 2. The total revenue of the Intercolonial Railway and the Montreal extension thereof from 30th June, 1898, exclusive, to the 1st day of May, 1899, exclusive. 3. The total expenditure charged to revenue account in connection with the Intercolonial Railway and the Montreal extension thereof from 30th June, 1898, exclusive, to the 1st day of May, 1899, exclusive. Presented 13th June, 1899.—*Mr. Powell*. . . . . *Not printed.*
- 57h. Return to an order of the House of Commons, dated 15th May, 1899, for a return showing the names of persons to whom payments were made of allowance or drawback on freight charges on the New Brunswick portion of the Intercolonial Railway during the months of January and February, 1899, the amount and date of payment in each case, and the date at which the overcharge was made. Presented 13th June, 1899.—*Mr. Foster*. . . . . *Not printed.*
- 57i. Return to an order of the House of Commons, dated 15th May, 1899, for a copy of lease or contract under which the Intercolonial Railway management permitted or authorized the building of a restaurant on the railway right of way at Grand Narrows. Also copies of all correspondence in reference to the granting of the privilege of erecting such building on the railway property, and also in reference to running the same. Presented 23rd June, 1899.—*Mr. McDougall*. *Not printed.*

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- 57j. Return to an order of the House of Commons, dated 19th April, 1899, for copies of advertisements issued during 1898, inviting tenders for steel rails and fastenings for the Intercolonial and Prince Edward Island Railways, copies of tenders received therefor, of all correspondence in connection therewith, and of any contract or contracts entered into. Presented 27th June, 1899.—*Sir Charles Tupper*..... *Not printed.*
- 57k. Supplementary return to 57e. Presented 28th June, 1899..... *Not printed.*
- 57l. Return to an order of the House of Commons, dated 26th June, 1899, showing the names of persons to whom payments were made of allowances or drawbacks on freight charges on the Nova Scotia portion of the Intercolonial Railway from 1st July, 1898, to 31st March, 1899, giving amount and date of payment and date at which overcharge was made. Presented 13th July, 1899.—*Mr. Bell (Pictou)*..... *Not printed.*
- 57m. Return to an order of the House of Commons, dated 19th June, 1899, showing: 1. The combined engine and car mileage—total, and that of the Intercolonial Railway—for each month from March 1, 1898, for the terminals, bridge, and the other leased portions of the Grand Trunk Railway, as contemplated in the third and thirty-third sections of the schedule to Bill No. 138. 2. The amounts for (a) maintenance and repairs, and (b) for all other operating expenses separately, incurred by the Grand Trunk Railway Company and the Intercolonial Railway each month since March 1, 1898. 3. Copy of returns and information made under section 33 of said schedule for each month from March 1, 1898. Presented 18th July, 1899.—*Mr. Foster*..... *Not printed.*
- 57n. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all petitions, memorials, letters and correspondence addressed to the government, or to any of the members thereof, since the last session, by the board of trade of the city of Quebec, the council thereof, the city council of the city of Quebec, or any other public bodies or citizens of the said city, in relation to a better service between the Intercolonial Railway and the city of Quebec. Presented 29th July, 1899.—*Mr. Casgrain*..... *Not printed.*
58. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all orders in council and all reports and correspondence made by or had between W. J. Christie, late of the inland revenue department, Winnipeg, and other officers of department in Manitoba, and the department at Ottawa or the minister of inland revenue relating to the removal, the suspension and final dismissal of W. J. Christie, lately one of the chief officers in department at Winnipeg. Presented 15th May, 1899.—*Mr. Roche*..... *Not printed.*
- 58a. Supplementary return to No. 58. Presented 30th May, 1899..... *Not printed.*
59. Return to an order of the House of Commons, dated 24th April, 1899, for copy of all reports to the minister of the interior, or to the department of the interior, or to any officer of that department from William Ogilvie, or from the council of the Yukon district, or from any member of such council relating to the administration of the said Yukon district or relating to any matter connected with the administration of the said district. Presented 15th May, 1899.—*Mr. Borden (Halifax)*..... *Not printed.*
60. Return to an order of the House of Commons, dated 19th April, 1899, for copies of all correspondence connected with the department of the interior at Ottawa authorizing the agent at Yorkton, Northwest-Territories, to grant entry for the S. E.  $\frac{1}{4}$  of section 14, township 24, range 3 west of the 2nd meridian, to Mr. W. C. Middleton. Presented 15th May, 1899.—*Mr. Davin*..... *Not printed.*
61. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all letters and telegrams that have passed between the government and the Ashcroft Water and Electric Company, or Mr. Peter Ryan, or Mr. John Shields, or any other person on their behalf in regard to the purchase of some 4,000 acres of land near Ashcroft, B.C., within the railway belt. Presented 15th May, 1899.—*Mr. Prior*..... *Not printed.*
62. Return to an address of the House of Commons, dated 19th April, 1899, for copies of any orders in council passed up to date respecting any officers of the department of the interior taking up mining claims; respecting any government officers taking up mining claims; respecting officers of the department of the interior making homestead entries or buying lands. Presented 15th May, 1899.—*Mr. Davin*..... *Not printed.*



CONTENTS OF VOLUME 14—*Continued.*

63. Return to an order of the House of Commons, dated 24th April, 1899, for copies of all letters, telegrams and communications from Archer Martin, of Victoria, B.C., barrister-at-law, to the minister of interior or to the deputy minister, or to any officers of the department of the interior, relating to the granting or recognition of any permit or authority to take or import liquor into the Yukon district or relating to the importation of liquor into the Yukon district, and all replies to such letters, telegrams and communications. Presented 15th May, 1899.—*Mr. Borden (Halifax).*  
*Printed for sessional papers.*
- 63a. Return to an order of the House of Commons, dated 24th April, 1899, for copies of all letters, telegrams and communications from Frederick Peters, Q.C., of Victoria, B.C., to the minister of the interior, or to any minister of the crown, or to any deputy minister, applying for or relating to the granting of any permit to take or import liquor into the Yukon district, and all replies to such letters, telegrams and communications. Presented 15th May, 1899.—*Mr. Borden (Halifax).*  
*Printed for sessional papers.*
- 63b. Correspondence relating to the importation of liquor into the Yukon territory. Presented 16th May, 1899, by Hon. C. Sifton.....  
*Printed for sessional papers.*
- 63c. Return to an order of the House of Commons, dated 8th May, 1899, for copies of all liquor permits issued by Major Walsh, and all reports and correspondence respecting his action in this respect. Presented 18th May, 1899.—*Sir C. Hibbert Tupper*.....  
*Printed for sessional papers.*
- 63d. Return to an order of the House of Commons, dated 15th May, 1899, for copies of correspondence, telegrams, etc., in connection with the management of the Yukon territory, alluded to in the speech of the honourable the minister of the interior, during the debate on the address in answer to His Excellency's speech at the opening of the session. Presented 25th May, 1899.—*Sir C. Hibbert Tupper*.....  
*Not printed.*
- 63e. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all correspondence which has taken place between the hon. the minister of the interior, or any officer of his department, and the government of the North-west Territories respecting the issue, granting or withholding of permits for the conveyance of liquor into the Yukon territory. Presented 30th May, 1899.—*Mr. Clarke*.....  
*Not printed.*
- 63f. Return to an order of the House of Commons, dated 19th April, 1899, for a return of all liquors taken into the Yukon since July 1, 1896, giving the names of the persons or companies taking them in, the quantity in each case, the date of issue of permit and the authority granting the permit; also all correspondence had with any parties in connection with the demand for, or granting of, permits for taking liquors into the Yukon. Presented 6th June, 1899.—*Mr. Foster.*  
*Not printed.*
- 63g. Return to an order of the House of Commons, dated 19th April, 1899, for an itemized statement of the number of gallons of intoxicating liquors taken into the Klondike district since July, 1896, the number of permits granted therefor, with the names and post office addresses of those to whom said permits were granted and the amount paid therefor. Presented 6th June 1899.—*Mr. Foster.*  
*Not printed.*
- 63g\*. Supplementary return to No. 63f. Presented 13th July, 1899.....  
*Not printed.*
64. Copy of agreement dated 1st July, 1890, between the Department of Railways and Canals and the Canadian Pacific Railway Company. Presented 16th May, 1899, by Hon. A. G. Blair.  
*Not printed.*
65. Return to an order of the House of Commons, dated 8th May, 1899, for copies of all letters, documents, memoranda, agreements and correspondence containing, embodying, relating to or referring to the terms and conditions upon which tenders were asked for the Magdalen Island mail contract, and upon which the contract was subsequently let to R. J. Leslie, of Leslie, Hart & Co., Halifax, N.S. Presented 17th May, 1899.—*Mr. Pope*.....  
*Not printed.*
66. Return to an address of the Senate, dated 24th March, 1899, for copies of all correspondence with and instructions given to Louis Coste, late engineer in the public works department, with reference to the Yukon-Teslin route, and the navigation of the rivers and lakes connected therewith, and all reports thereon, made by the said Louis Coste. Presented 17th May, 1899.—*Hon. Sir Mackenzie Bowell*.....  
*Not printed.*
- 66a. Return to an order of the House of Commons, dated 24th April, 1899, for a copy of the report or reports of Mr. Coste, late engineer of the public works department, on the Yukon, more especially on the Teslin Lake route for a railway into the Yukon; also a copy of the report of Mr. Lafontaine, or a copy of their joint report, if they made such a report. Presented 18th May, 1899.—*Mr. Davin*.....  
*Printed for sessional papers.*

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66. (1898.) Report of commissioners appointed to investigate, inquire into and report upon the state and management of the business of the St. Vincent de Paul penitentiary. Presented 26th April, 1898.—*Printed for distribution and sessional papers this year (1899). See Sessional Paper No. 18, page 221.*
67. Return to an address of the Senate, dated 11th April, 1899, for: 1. Copy of the last government return made by La Banque du Peuple before that bank suspended payment, as well as the name of the bank official and a copy of the declaration made by him. 2. Copy of the different statements of the affairs of said bank submitted by the directors at each of the public meetings of the stockholders and depositors which were held since the date of suspension. 3. List of the names of the directors of the bank at the date of its suspension, and the number of shares held by each of such directors on that date. 4. List of sales or transfers, if any, that may have been made of the stock of any one or more of the directors since the date of the suspension, and to whom made. 5. List of any vacancy or vacancies that may have occurred since the said date and the cause or causes thereof, as well as the names of those who have been appointed to fill any such vacancy. 6. The price as near as can be ascertained from the quotations of the stock of any sales or transfers that were made within the last month immediately before such suspension, and the prices paid for any such transfer of stock that may have been made since the date of suspension up to 1st April, 1899. 7. List of the names of the stockholders of the bank on the 1st day of April, 1899, and the number of shares held by each on that date. 8. Statement in detail of the assets and liabilities of the bank, excepting therefrom the liabilities to the depositors and stockholders which may be given in the aggregate. Presented 17th May, 1899.—*Hon. Mr. McMillan. . . . . Not printed.*
68. Return to an address of the House of Commons, dated 8th May, 1899, for copies of all correspondence between the government and B. Haigh & Son, of British Columbia, or any person or persons acting on their behalf in the year 1880, or thereabouts, in regard to an application for the use of Deadman's Island. Also between the Dominion government and the attorney general of the province of British Columbia or other member of the provincial government in regard to the said application, or to the subject thereof. Presented 18th May, 1899.—*Mr. Prior. . . . . Not printed.*
- 68a. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all orders in council respecting Stanley Park and Deadman's Island, Vancouver, B.C., and all correspondence between the different departments of the Canadian government and the imperial military and naval authorities respecting the park or island or both. Also for copies of all correspondence respecting the same with the government of British Columbia, the city of Vancouver and the park authorities. Also for all correspondence between the member for Burrard, the hon. minister of militia and defence and the department of militia, the hon. minister of the interior and other members of the government respecting the same. Also for all correspondence between Mr. Ludgate and his representative and any department of government respecting Deadman's Island. Also a copy of all applications and correspondence respecting a lease or grant of Deadman's Island. Also a copy of all departmental reports, memoranda or letters on file in the departments of justice, interior, militia and defence respecting the park, Deadman's Island, or the title and disposal of the same. Also a copy of all grants or leases of the park or Deadman's Island. Also all reports or information obtained by the different departments before any lease or grant of Deadman's Island was enacted. Also all memorials or correspondence respecting the granting of any lease of Deadman's Island. Presented 31st May, 1899.—*Mr. Prior.*  
*Printed for both distribution and sessional papers.*
69. Return to an order of the House of Commons, dated 19th April, 1899, for a return of all papers, documents and correspondence between the Winnipeg grain exchange and the department of public works in reference to keeping the harbour at Fort William free of ice to the latest possible date. Presented 18th May, 1899.—*Mr. Roche. . . . . Not printed.*
70. Return to an address of the House of Commons, dated 19th April, 1899, for copies of letters, instructions, correspondence and report of the commissioner appointed to inquire into the grievances of the workmen on the Crow's Nest Pass Railway, and into the circumstances attending the death of two of said employees, named McDonald and Fraser, at or near Pincher Creek, with report of the commissioner in re-investigation with respect to all the facts connected with the death of Charles P. McDonald and E. McC. Fraser, who were employed in connection with the construction of the Crow's Nest Pass Railway. Presented 18th May, 1899.—*Mr. Bell (Pictou).*  
*Summary Report printed for both distribution and sessional papers.*

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71. Return to an order of the House of Commons, dated 19th April, 1899, for copies of instructions given to Mr. F. C. Wade, whether before he left for Dawson to act in several official capacities or subsequently, more particularly a copy of the permission given him, if the permission was, in writing, to stake claims in the Klondike. Presented 18th May, 1899.—*Mr. Davin*... *Not printed.*
72. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all correspondence between the government of British Columbia and the government of Canada since July, 1898, to the present date respecting the supreme courts, county courts or any of the judges for the province aforesaid, the appointments of said judges or of any of them, or other matters relating to the administration of justice in the said province. Presented 25th May, 1899.—*Sir C. Hibbert Tupper*..... *Not printed.*
73. Return to an order of the House of Commons, dated 24th April, 1899, for copies of any correspondence in relation to the construction of sheds on the wharfs at St. Méthode and Mistassini, and to the awarding of the contract for the said buildings to L. P. Bilodeau, of Roberval. Presented 25th May, 1899.—*Mr. Casgrain*..... *Not printed.*
74. Return to an order of the House of Commons, dated 24th April, 1899, for copies of all papers, correspondence, etc., in connection with the award of the contract to Mr. Thomas Gauthier, of Montreal, by the department of public works for the dredging at Coteau Landing; the call for tenders, if any; the amount expended out of the \$21,000 voted, and to whom paid. Also correspondence between Mr. Gauthier and Mr. McDonald, who did the work; the amount of work done in cubic feet, and how paid. Presented 25th May, 1899.—*Mr. Bergeron*.  
*Printed for sessional papers.*
75. Return to an order of the House of Commons, dated 24th April, 1899, for copies of correspondence between the government, or the department of public works, and Mr. W. Donaghue, or any other person, in relation to the building of scows at Roberval to accompany the dredge at that place, and to the awarding of the contract for the building of the said dredges to the said W. Donaghue. Presented 25th May, 1899.—*Mr. Casgrain*..... *Not printed.*
76. Return to an order of the House of Commons, dated 10th May, 1899, for copies of all leases, papers and documents of and concerning the lease of certain property on Isle aux Noix, in the province of Quebec, held by the government and under the control of the department of militia and defence, showing the names of lessees since 1st January, 1895, to present time, and the amount of rental paid by such lessees. Presented 25th May, 1899.—*Mr. Quinn*..... *Not printed.*
77. Return to an order of the House of Commons, dated 19th April, 1899, for a return showing when and for what period the steamer "Alaska" was engaged on the survey of the channel in Lake St. Francis, and the service the steamer "Alert" was engaged on during the same period. Presented 25th May, 1899.—*Mr. Taylor*..... *Not printed.*
78. Return to an order of the House of Commons, dated 19th April, 1899, for a return showing the amounts paid to Tom S. Rubidge, superintending engineer of the Cornwall canal, for salary and expenses from 1st January, 1897, to 1st January, 1899. A detailed statement of the amount paid for cab or hack hire in the same period. A statement of the total expense incurred in connection with the steamer "Alert"; also a statement showing how many days the steamer "Alert" was engaged in actual survey work, from 1st January, 1897, to 1st January, 1899, and how many days in any other service and the nature of the same. Presented 25th May, 1899.—*Mr. Taylor*.  
*Not printed.*
79. Return to an address of the House of Commons, dated 30th March, 1898, for copies of all reports to his excellency the governor general, minutes of council, reports, papers and correspondence in any way relating to the navigation of the Yukon or Stikine rivers, or to customs regulations in connection therewith, including the transshipment of cargoes; also all reports to his excellency the governor general, minutes of council, correspondence and papers touching the customs regulations, and fees imposed in connection with Canadian goods passing through St. Michael's, Dyea, Skagway and Wrangel. Presented 25th May, 1899.—*Sir Charles Tupper*.  
*Printed for sessional papers.*
80. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all correspondence and papers connected with the removal of Mr. Fawcett from the position of Yukon gold commissioner. Presented 25th May, 1899.—*Mr. Davin*..... *Not printed.*

CONTENTS OF VOLUME 14—*Continued.*

81. Return to an address of the House of Commons, dated 15th May, 1899, for copies of all orders in council, ordinances, commissions, appointments, bond certificates and oaths, relating to the appointment of the sheriff for Yukon territory; also copies of the same papers respecting the appointment of the clerk of the court for the Yukon territory. Presented 25th May, 1899.—*Sir C. Hibbert Tupper*.....*Not printed.*
82. Return to an address of the House of Commons, dated 14th March, 1898, for copies of all correspondence between the government of Canada, or any member thereof, and the United States government, either directly or through the British government or its representative at Washington, in reference to bonding or transit arrangements on the Pacific coast, and to the relief of destitute persons in the Yukon or Alaska districts. Also any reports of ministers to the government on these matters. Presented 25th May, 1899.—*Mr. Foster*.....*Not printed.*
83. Return to an order of the House of Commons, dated 8th May, 1899, for a return showing the number and names of all United States fishing vessels not possessing *modus vivendi* licenses to which concessions were granted in the Atlantic ports of Canada during the months of November and December, 1898, and January and February, 1899; together with all correspondence between the government or any member thereof and officers of the government, showing under what circumstances privileges were granted to any of said American vessels. Presented 26th May, 1899.—*Mr. McAlister*.....*Not printed.*
84. Return to an order of the House of Commons, dated 30th March, 1898, for a return of copies of all correspondence, instructions, reports, bills of costs and accounts, together with a statement of all moneys paid by the Dominion government in connection with the prosecutions arising out of the Dominion general elections of 1896 in the province of Manitoba. Presented 29th May, 1899.—*Mr. Roche*.....*Not printed.*
- 84a. Supplementary return to No. 84. Presented 2nd June, 1899.....*Not printed.*
85. Return to an order of the House of Commons, dated 7th June, 1897, for copies of all correspondence between the government and any parties in the county of Brant relating to the appointment of Dr. Levi Secord, of Brantford, Dr. McKee, of the same place, and Dr. Beer, formerly of Platts-ville, in the county of Oxford, to the positions of head physician and assistants to the Indians on the reservation in the township of Tuscarora, county of Brant. Presented 29th May, 1899.—*Mr. Clancy*.....*Not printed.*
86. Return to an order of the House of Commons, dated 19th April, 1899, for copies of all correspondence, from July 1, 1896, to the present date, between the Canadian government and the imperial authorities and between the Canadian government and the office of the high commissioner for Canada in London, relating to the cattle embargo. Presented 27th May, 1899.—*Mr. Montague*.  
*Printed for sessional papers.*
87. Copy of the order in council of the 7th October, 1898, providing for appointment of Mr. William Ogilvie as a commissioner, under the provisions of chapter 114, R.S.C., to investigate the charges and complaints referred to in such order in council; copy of the commission issued under the great seal of Canada, appointing Mr. Ogilvie such commissioner; copy of his report of the 27th April, 1899, and copies of the three public notices referred to in such report and attached thereto. Presented 30th May, 1899, by Hon. C. Sifton...*Printed for both distribution and sessional papers.*
- 87a. Copy of commission which issued in favour of William Ogilvie, Esq., under the provisions of chapter 114 R.S.C., to hold an investigation and take evidence under oath with regard to certain charges made against officials of the Dominion government in the Yukon territory; and copy of the evidence taken under such commission. Presented 9th June, 1899, by Hon. C. Sifton.  
*Printed for both distribution and sessional papers.*
- 87b. Copy of further report, dated the 27th May, 1899, of William Ogilvie, Esq., commissioner appointed under the provisions of chapter 114, R.S.C., and by commission issued thereunder, under the great seal of Canada, to hold an investigation and take evidence under oath with regard to certain charges made against officials of the Dominion government in the Yukon territory. Presented 7th July, 1899, by Hon. C. Sifton.....*Printed for both distribution and sessional papers.*
- 87c. Copy of the evidence which accompanied the further report of the 27th May, 1899, of William Ogilvie, Esq., commissioner appointed under the provisions of chapter 114, R.S.C., and by commission issued thereunder, under the great seal of Canada, to hold an investigation and take evidence under oath with regard to certain charges made against officials of the Dominion government in the Yukon territory; of which further report a copy was laid before the House of Commons upon the 7th July, 1899. Presented 12th July, 1899, by Hon. C. Sifton.  
*Printed for both distribution and sessional papers.*

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- 87d. Return to an order of the House of Commons, dated 27th July, 1899, for copy of a report of William Ogilvie, commissioner, relative to the values placed upon the steamers "Pingree" and "Low" for customs entry. Presented 27th July, 1899.—*Mr. Paterson*.....*Not printed.*
88. Return to an address of the Senate, dated 22nd May, 1899, for: 1. The original contract entered into between the government and the proprietors of the Drummond County Railway and the Grand Trunk Railway Company. 2. The present contract or agreement entered into between the same persons or companies. 3. A statement of all moneys paid to the proprietors of said railways from the date of the non-ratification of the first contract to the 31st March, 1899. 4. An account of the earnings and working expenses of the Drummond County Railway from the time of its being first worked in connection with the Intercolonial Railway to the 31st March, 1899. 5. And also an account of the total amount of money paid the Grand Trunk Railway Company for station accommodation, running powers over its line, for bridge extension, or for any purpose whatever in connection with the extension of the Intercolonial Railway system to Montreal. Presented 29th May, 1899.—*Hon. Sir Mackenzie Bowell*.....*Printed for sessional papers.*
- 88a. Return to an address of the Senate, dated 22nd June, 1899, calling for copies of any or all supplemental agreements and traffic arrangements entered into between the railway department of Canada and the Grand Trunk Railway Company, in connection with the contract entered into between the aforesaid parties for the extension of the Intercolonial Railway to the city of Montreal. Presented 26th June, 1899.—*Hon. Sir Mackenzie Bowell*.....*Printed for sessional papers.*
89. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all petitions addressed to his excellency the governor general by members of the Turner administration in the province of British Columbia respecting the conduct of his honour the lieutenant governor of that province, and praying for the appointment of a commission to inquire into the same, together with all papers and correspondence connected with said petition; and also copies of all papers and correspondence in any way relating to the action of his honour the lieutenant governor of British Columbia in dismissing the Turner administration in the said province. Presented 31st May, 1899.—*Mr. Prior*.....*Printed for both distribution and sessional papers.*
90. Return to an address of the House of Commons, dated 19th April, 1899, for: 1. Copies of all correspondence had with the departments of inland revenue, during the last ten years, in relation to the compulsory inspection of potash at the port of Montreal. 2. Copies of all petitions presented on the same subject to the honourable the minister of inland revenue. Also copies of resolutions adopted by the Montreal board of trade and others, urging the government to adopt some measure to protect the Canadian trade in potash. Presented 31st May, 1899.—*Mr. Préfontaine*.....*Not printed.*
91. Return to an order of the House of Commons, dated 24th April, 1899, for: 1. Statement showing the quantity of Canadian tobacco grown and manufactured during each year since 1890. 2. The number of factories established since 1890—with the date in each instance—for the manufacture of Canadian tobacco, or of Canadian and foreign tobacco mixed. 3. Copies of all petitions, applications and memorials presented to the government since 1896 in relation to the duties on tobacco. Presented 31st May, 1899.—*Mr. Gauthier*.....*Not printed.*
92. Copy of the prospectus of the British Canadian Gold Fields of the Klondike Company, Limited, and copies of correspondence and other papers on file in the department of the interior, respecting the alleged connection of Mr. William Ogilvie with that company. Presented 31st May, 1899, by Hon. C. Sifton.....*Not printed.*
93. Return to an order of the House of Commons, dated 19th April, 1899, for statement showing the amounts voted and the amounts expended, under their proper headings, by the Dominion government on the harbour of Montreal during the last twenty-eight years; also the amounts voted and the amounts expended, under their proper headings, by the Dominion government on the harbour of Victoria, B.C., during the last twenty-eight years. Presented 31st May, 1899.—*Mr. Prior*.....*Not printed.*
94. Return to an order of the House of Commons, dated 15th May, 1899, for a return showing the actual expenditure on reconstruction of the pier at China Point, in the province of Prince Edward Island, the date of such payments, to whom the payments were made and the amount paid to each person; the amount paid for actual labour performed; the amount paid for material not used, and when; the quantity and kind of material purchased, and the price; the present actual condition of the pier; the progress made towards reconstruction; and all papers, correspondence and documents relating to or giving any information or particulars respecting the matters aforesaid. Presented 31st May, 1899.—*Mr. Martin*.....*Not printed.*

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95. Return to an order of the House of Commons, dated 10th May, 1899, for a return showing all sums expended to date upon the new wharf at Pointe Claire, P.Q. Also how far the works have progressed; a copy of the estimate of the cost of said wharf and statement showing how much it will cost to finish said wharf. Copies of all advertisements calling for tenders, as well as of all tenders and correspondence upon the subject. Presented 31st May, 1899.—*Mr. Monk*.....*Not printed.*
96. Return to an order of the House of Commons, dated 8th May, 1899, for copies of all correspondence, telegrams, papers, etc., in connection with the seizure of traps and ropes belonging to Messrs. Benjamin Compton & Co., of Belle River, in the province of Prince Edward Island, on 30th July, 1898, by the Dominion cruiser "Acadia." Presented 1st June, 1899.—*Mr. Martin*.....*Not printed.*
97. Return to an address of the House of Commons, dated 17th May, 1899, for copies of all letters, telegrams, cablegrams, memorials and other papers received by the right hon. the prime minister of Canada, the Hon. J. I. Tarte, the minister of public works, or the Hon. A. G. Blair, the minister of railways and canals, from the Northern Commercial Telegraph Company, Limited, the Commercial Telegraph Construction Syndicate, Limited, or the W. T. Henley Telegraph Works, Limited, or from any director or directors, person or persons on behalf of or as representing any of these companies, or from the high commissioner for Canada in London, or from any other person or company respecting the construction by or for the Northern Commercial Telegraph Company, Limited, of a telegraph line between Skagway and Dawson, or of a submarine cable telegraph between some point in British Columbia and Skagway or Wrangel, or in any way relating to either of their objects. Also copies of all letters from the right hon. the prime minister of Canada, or from either of said other ministers to any of said companies or to any director or directors or other person or persons acting or purporting to act on behalf of any of said companies in any way relating to the construction of said telegraph line or cable line by, for or under the charter of the Northern Commercial Telegraph Company, Limited. Also copies of all correspondence between the Dominion government or any member or department thereof and the United States government at Washington or any department thereof bearing upon the laying and landing of a submarine cable between some point in British Columbia and Skagway or Wrangel or any point between these places. Presented 1st June, 1899.—*Mr. Prior*.....*Not printed.*
- 97a. Supplementary return to 97. Presented 26th June, 1899.....*Not printed.*
98. Return to an address of the Senate, dated 6th June, 1898, for a statement of the cost of the voyages undertaken in 1897 by the honourable the prime minister and by the honourable the solicitor general, to Europe, to the United States or elsewhere, together with the travelling expenses of their private secretaries or of any other persons composing their following. Presented 29th May, 1899.—*Hon. Mr. Landry*.....*Not printed.*
99. Protocol No. Lxiii of the Joint High Commission, Washington, respecting the boundary between Alaska and Canada. Presented 5th June, 1899, by Sir Wilfrid Laurier.  
*Printed for both distribution and sessional papers.*
100. Return to an order of the House of Commons, dated 17th May, 1899, for copies of all papers, plans, maps, reports of fishery officers, correspondence and other documents relating to the existence of a dam across river Jésus, near the town of Terrebonne, and the construction of a fishway therein according to the requirements of the law. Presented 5th June, 1899.—*Mr. Fortin*.....*Not printed.*
101. Return to an order of the House of Commons, dated 19th April, 1899, for a list of all persons employed since 1st August, 1896, by the minister of interior outside of the civil service employees in Ottawa, for purposes of immigration, detailing the names and post office addresses of the appointees, their rate of wages and allowances, the date and reason for dismissal where dismissals have taken place, and the country or districts in which their work has been performed. Presented 5th June, 1899.—*Mr. Foster*.....*Not printed.*
102. Return to an order of the House of Commons, dated 19th April, 1899, for a statement of all persons appointed to office or assigned to duties of any kind in the Yukon district since 1st August, 1896, giving the names, post office addresses, rate of salary and allowances or expenses of each person, the duties assigned, the date of his appointment, the date of resignation or dismissal, and the reason therefor in the case of each resignation or dismissal. The above statement not to include mounted police or Canadian militiamen, but to include paymasters in each branch. Presented 5th June, 1899.—*Mr. Foster*.....*Not printed.*
- 102a. Supplementary return to No. 102. Presented 9th June, 1899.....*Not printed.*
- 102b. Copies of orders in council relating to the Yukon. Presented 21st June, 1899, by Hon. C. Sifton.  
*Not printed.*

CONTENTS OF VOLUME 14—*Continued.*

103. Return (in part) to an order of the House of Commons, dated 26th April, 1899, for a statement of all persons or commissions of inquiry appointed to inquire into the conduct of employees of the government since 1st August, 1896, giving the names of commissioners, their rate of pay and allowances, the aggregate total amount paid to each as pay and allowance, and the total expenses of each commission outside of pay and allowance; also the names and post office addresses of all persons dismissed on the reports of the commissioners (Marine and Fisheries). Presented 6th June, 1899.—*Mr. Foster*.....*Not printed.*
- 103a. Supplementary return to No. 103. (Customs Department.) Presented 6th June, 1899.  
*Not printed.*
- 103b. Return to an address of the House of Commons, dated 14th February, 1898, for a return showing names of commissioners appointed by the government to inquire into the conduct of all employees of the civil service in the province of Quebec since the 23rd of June, 1896, and the amount paid to each commissioner as salary or travelling expenses. Presented 14th June, 1899.—*Mr. Monk*.  
*Not printed.*
- 103c. Return (in part) to an address of the Senate, dated 28th April, 1899, of the names of all commissioners appointed by order in council or otherwise since the 9th April, 1897, to inquire into and report upon charges preferred against any employee of the government, whether permanent or temporary, of offensive partisanship, or of any misconduct whatever. 2. The reports of said commissioners, or of commissioners previously appointed, not already brought down, and a statement showing the action taken by the government thereon. 3. The amounts paid each commissioner since the 9th April, 1897, in fees, *per diem* allowance, travelling expenses and incidentals of all kinds. 4. The names, ages, offices and salaries of all employees in the inside or outside service of the government, whether temporary or permanent, who since the 9th April, 1897, have been removed from office by dismissal, superannuation, or otherwise, whether on a report of a commission or otherwise, specifying in each case the grounds of dismissal, and the amount of superannuation or gratuity granted, if any; also the age, office, salary or remuneration of any and every person appointed in the place of, or as a consequence of every such removal. Presented 28th June, 1899.—*Hon. Sir Mackenzie Bowell*. . . . .*Printed in abstract form.*
- 103d. Supplementary return to No. 103. (Post Office Department.) Presented 5th July, 1899.  
*Not printed.*
- 103e. Supplementary return to No. 103c. Presented 4th July, 1899. . . . .*See 103c.*
- 103f. Supplementary return to No. 103c. Presented 5th July, 1899. . . . .*See 103c.*
- 103g. Supplementary return to No. 103. (Railways and Canals.) Presented 29th July, 1899.  
*Not printed.*
- 103h. Supplementary return to No. 103c. Presented 28th July, 1899. . . . .*See 103c.*
104. Return to an address of the House of Commons, dated 19th April, 1899, for copies of all statements, claims, memoranda, correspondence, telegrams, etc., with the government of Prince Edward Island and a delegation from that province, in March last, consisting of the Honourable Hector C. Macdonald, Jas. W. Richards, and Benjamin Rogers, in regard to questions at issue between the government of Prince Edward Island and the dominion of Canada. Presented 6th June, 1899.—*Mr. Martin*. . . . .*Printed for sessional papers.*
105. Return to an address of the House of Commons, dated 19th April, 1899, for all papers and correspondence, including orders in council, tenders and contracts in connection with the engraving, printing and supply of paper for the denominational postal notes, with a sample of the notes printed. Presented 6th June, 1899.—*Mr. Foster* . . . . .*Not printed.*
- 105a. Return to an order of the House of Commons, dated 19th April, 1899, for a statement of all separate issues of postal stamps, cards, or notes since 1st January, 1897, noting those that have gone out of use, the quantity and date of each issue, and a sample of each issue, and giving in the case of the jubilee stamps, the cost and amount of cash returned to the treasury for each denomination. Presented 12th June, 1899.—*Mr. Foster* . . . . .*Not printed.*
- 105b. Return to an order of the House of Commons, dated 24th April, 1899, for a copy of contract for the production of postal notes, and the cost of such per 1,000 of each denomination, exclusive of paper, and for all correspondence between the contractor, the government and the queen's printer. Also for a statement of the number of reams of paper made for each denomination, by whom ordered to be made, where made, and name of manufacturer, and who has now possession of the Dandy rolls from which the paper was made. And also the following statements: Who furnished the electrotypes, and where they were made, the date of first delivery of postal notes, and amount of

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- security given by the contractor, and whether the contractor has supplied the necessary accommodation for government clerks for superintendence and storage for an ample supply of paper, Presented 12th June, 1899.—*Mr. Foster* . . . . . *Not printed.*
- 105c. Return (in part) to an order of the House of Commons, dated 29th May, 1899, showing in detail all dies, plates or other parts, wholly or partially engraved, entered or imported by or for the use of the American Bank Note Company and the British American Bank Note Company, to be used in the making of bank notes, postage stamps, postal notes and inland revenue stamps for the government, with the valuation and amount of duty charged and collected. Presented 12th June, 1899.—*Mr. Foster* . . . . . *Not printed.*
- 105d. Return to an order of the House of Commons, dated 19th April, 1899, for all correspondence had with the post office department, or any member of the government, in reference to the quality of the post cards issued by the post office department since 1st July, 1896. Presented 19th June, 1899.—*Mr. Foster* . . . . . *Not printed.*
106. Return to an order of the House of Commons, dated 24th April, 1899, for number of jubilee stamp plates engraved and their denominations, and cost of such plates. Cost of jubilee stamps per 1,000 complete. Also the number of plates engraved for the greater empire stamp, and the cost per plate, with the valuation and amount of duty charged and collected. Presented 6th June, 1899.—*Mr. Foster.*  
*Printed for sessional papers.*
107. Return to an address of the House of Commons, dated 8th May, 1899, for copies of all papers, including affidavits, and of all correspondence between the government and the government or public officials of the United States or other parties, concerning the case of Thomas Meagher, who was arrested by United States customs officers in Canadian waters, in the river St. Clair, on 19th August, 1898; was held in custody and grossly ill-treated by said officials for some time and afterwards imprisoned, and who was finally discharged without trial by order of the United States government. Presented 6th June, 1899.—*Mr. Cowan* . . . . . *Not printed.*
108. Return of the names and salaries of all persons appointed to or promoted in the civil service during the calendar year 1898. Presented 6th June, 1899, by Sir Wilfrid Laurier.  
*Printed for sessional papers.*
109. Return to an address of the House of Commons, dated 14th March, 1898, for copies of all correspondence, reports, orders in council and instructions in reference to the admission of foreign countries to commercial privileges under the so-called preferential clause of the tariff of 1897. Presented 6th June, 1899.—*Mr. Foster* . . . . . *Printed for sessional papers.*
110. Documents relating to the recent disallowance of certain statutes passed by the legislature of British Columbia. Presented 7th June, 1899, by Sir Wilfrid Laurier.  
*Printed for both distribution and sessional papers.*
- 110a. Further documents relating to the recent disallowance of certain statutes passed by the legislature of British Columbia. Presented 21st June, 1899, by Sir Wilfrid Laurier . . . . . *Not printed.*
111. Return to an order of the House of Commons, dated 18th April, 1898, for a return showing by departments, the expenditure in each year, beginning 1st July, 1890, for salaries in the outside service of the post office, customs and inland revenue departments, detailed by posts and sub-posts in the case of the inland revenue and customs, and by post offices in case of employees in the postal service, of all employees, whether temporary or permanent. Presented 7th June, 1899.—*Mr. McMullen* . . . . . *Not printed.*
112. Return to an address of the House of Commons, dated 15th May, 1899, for copies of all complaints, referred to on page 3 of the report of the deputy minister of interior (Annual Report of the Department of the Interior for the year 1897), minutes of council, commission instructions and report of Mr. Archer Martin, the commissioner, respecting the New Westminster crown timber office. Presented 9th June, 1899.—*Sir Charles Hibbert Tupper* . . . . . *Not printed.*
113. Return to an address of the House of Commons, dated 30th March, 1898, for copies of all instructions given by the government of Canada, or any department thereof, to Charles Russell, Esq., solicitor, London, England, or to the firm to which he belongs, or to any member thereof, in relation to any case or business in which the said government or any department thereof was or is concerned; also copies in detail of all bills of costs or accounts rendered by the said persons to the government or any department since 1st July, 1896. Presented 9th June, 1899.—*Mr. Bergeron.*  
*Printed for sessional papers.*
114. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all correspondence between the Northern Commercial Telegraph Company and the department of public works during the last six months. Presented 12th June, 1899.—*Mr. Maxwell* . . . . . *Not printed.*



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115. Return to an order of the House of Commons, dated 15th May, 1899, for copies of all correspondence, telegrams, reports, contracts, tenders and all other papers and documents in connection with the change in carrying the mails for Prince Edward Island between the Intercolonial Railway and Cape Tormentine during the past winter. Presented 12th June, 1899.—*Mr. Martin. Not printed.*
116. Return to an address of the House of Commons, dated 10th May, 1899, for copies of all petitions, correspondence, telegrams and instructions in reference to the granting of a bonded warehouse to John Gow Scrimgeour at Cardigan Bridge, Prince Edward Island. Presented 12th June, 1899.—*Mr. Macdonald (King's). Not printed.*
117. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all correspondence between the government or any member thereof, or any person or official in behalf of the same, and the Canada Eastern Railway Company, or any person in behalf thereof, and of any reports and papers in connection with any proposal to purchase for the government the said railway. Presented 12th June, 1899.—*Mr. Foster. Not printed.*
118. Return to an address of the House of Commons, dated 8th May, 1899, for copies of all orders in council, and all papers and correspondence had with the department of railways and canals or the minister of railways by the officers of the Central Railway Company of New Brunswick, or by any contractors or persons concerned in the construction of the said Central Railway Company of New Brunswick, or any one in their behalf, in connection with the payment of subsidy or grants made to the said company. Presented 13th June, 1899.—*Mr. Foster. Not printed.*
119. Return to an address of the House of Commons, dated 29th May, 1899, for copies of all correspondence, telegrams and reports that have passed between the Dominion government and the provincial government of British Columbia, or any person or persons acting on their behalf, in regard to the Songhees Indian reserve at Victoria, B.C., since 1st June, 1897. Presented 13th June, 1899.—*Mr. Prior. Not printed.*
120. Return to an order of the House of Commons, dated 15th May, 1899, for copies of all correspondence between the minister or any officials of the department of interior and Mr. A. Soper, of Port Perry, or other persons in reference to the suppression of the sale of liquor to the Scugog Indians. Presented 13th June, 1899.—*Mr. Foster. Not printed.*
121. Return to an order of the House of Commons, dated 8th May, 1899, for copies of all contracts or agreements entered into by or with the postmaster general or the post office department or her majesty or the government of Canada for the carriage of the mails into or out of the Yukon territory or district or any part thereof; and also copies of all advertisements for tenders for the carriage as aforesaid of such mails, and all tenders received by the postmaster general, the post office department or the government of Canada or her majesty the queen, for the carriage of mails into or out of the Yukon territory or district, also copies of all reports, letters and communications in writing from the post office inspector at Victoria, or any other post office inspector, or any other officer of the post office department with respect to such tenders or advertisements or with respect to the acceptance or rejection of any of the said tenders. Presented 13th June, 1899.—*Sir C. Hibbert Tupper. Not printed.*
122. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all correspondence, papers, petitions, etc., in connection with the resignation of Dr. Morris as postmaster at Dundas, Prince Edward Island, and the appointment of his successor and persons applying for the position. Presented 13th June, 1899.—*Mr. Macdonald (King's). Not printed.*
123. Return to an order of the House of Commons, dated 8th May, 1899, for: 1. A return showing the number of letter carriers who were employed in the post office in Victoria, B.C., in the year 1895-6, 1896-7 and 1897-8 respectively and the number employed at the present time. 2. The salary paid to each letter carrier employed in 1895-6 and salaries paid in the present year. 3. The provisional allowance granted to said letter-carrier in 1895-6 and in 1896-7 and 1897-8. Presented 13th June, 1899.—*Mr. Prior. Not printed.*
124. Return to an order of the House of Commons, dated 8th May, 1899, for a statement showing the weight of every issue of the daily and weekly publications issued in Toronto and Montreal since the introduction of the law requiring that all publications must be weighed and stamped before the acceptance of same at the post office of issue of paper. Presented 13th June, 1899.—*Mr. Quinn. Not printed.*

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125. Return to an order of the House of Commons, dated 26th April, 1899, for a statement in detail of all sums expended on account of the joint high commission between Great Britain and the United States since its inception to date, with the names of all persons connected therewith as commissioners, secretaries, clerks and attendants and the rate and total amounts of compensation of each as salary, allowances and expenses itemized. Presented 14th June, 1899.—*Mr. Foster.*  
*Not printed.*
126. Return to an address of the House of Commons, dated 18th April, 1898, for copy of all instructions, correspondence by letter or telegram between the government or any department or officer thereof and the representative of the crown, or any other person in relation to the postponement of the hearing of the appeal before the court of queen's bench, in the case of the Queen *vs.* Coulombe and others during the last term of the said court at Quebec, and of all documents in relation thereto. Presented 14th June, 1899.—*Mr. Casgrain.*..... *Not printed.*
127. Return to an address of the House of Commons, dated 1st May, 1899, for copies of all correspondence, petitions, resolutions and other papers in possession of the government, relating to the proposed branch railway from Southport to Murray Harbour and other proposed railway branches in the province of Prince Edward Island. Presented 14th June, 1899.—*Mr. Martin.*.... *Not printed.*
128. Return to an order of the House of Commons, dated 8th May, 1899, showing: 1. Settlements (if any) that have been made by the department of railways and canals since and during the last session, with those parties who suffered from the construction of the Roche-Fendue and Calumet dams in 1883. 2. The names of the valuers who adjusted the said claims, and by whom their appointment was recommended. Presented 14th May, 1899.—*Mr. Poupore.*..... *Not printed.*
129. Return to an order of the House of Commons, dated 26th April, 1899, for all papers and correspondence in connection with the claim of the British American Bank Note Company for the balance alleged to be due to the company for contract work done for the post office department. Presented 15th June, 1899.—*Mr. Foster.*..... *Not printed.*
130. Return to an order of the House of Commons, dated 10th May, 1899, showing the names of persons appointed to positions in the Toronto post office since 13th July, 1896, the date of each such appointment, the salary paid to each such person and the office to which each such person was appointed. Presented 15th June, 1899.—*Mr. Clarke.*..... *Not printed.*
131. Return to an address of the Senate, dated 21st March, 1898, for copies of all reports and surveys made by officers of the department of railways and canals, regarding the straightening of certain curves on the Prince Edward Island Railway at or near North Wiltshire, and also a statement showing: 1. The amount expended on straightening the said curves, and to whom paid. 2. How was the expenditure made, by tender or by day's work. 3. The nature and extent of the changes made. 4. What further changes, if any, are contemplated. Presented 13th June, 1899.—*Hon. Mr. Ferguson.*..... *Not printed.*
132. Return to an address of the Senate, dated the 25th May, 1899, for certified *verbatim* copies of all letters or other documents written to the minister or any official connected with the department of the interior, or to any member of the government, by H. H. Norwood, the person appointed by the government to the position of gold inspector in the Yukon district. Presented 13th June, 1899.—*Hon. Mr. Primrose.*..... *Not printed.*
133. Return (in part) to an address of the Senate, dated the 23rd March, 1899, showing the amounts of customs and excise duties collected on goods imported into that part of the Dominion known as the Yukon and Klondike country, from the first day of September, 1898, to the first day of March, 1899, specifying the character of the goods so imported and the countries from whence imported; together with a statement showing the quantity and character, as far as practicable, of Canadian goods sent to the said Yukon district during the same period. Presented 13th June, 1899.—*Hon. Sir Mackenzie Bowell.*..... *Not printed.*
134. Return to an address of the House of Commons, dated 8th May, 1899, for copy of a memorial signed by the late Honourable John Norquay, president of the executive council of the province of Manitoba, on behalf of said council, praying to be heard before her majesty in council on the interference of the governor general in council in the practice of disallowing acts clearly within the power of local legislature and asking that the same be discontinued; which memorial was addressed to the honourable the secretary of state of Canada with request that the same be transmitted to her majesty in council; also copies of all correspondence, reports to or from, and orders in council in connection therewith. Presented 16th June, 1899.—*Mr. LaRivière.*

*Printed for sessional papers.*

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135. Return to an order of the House of Commons, dated 18th April, 1898, for a return showing the amount spent by the government in the financial years 1896-7, 1897-8, and the proposed expenditure for the year 1898-9 on private piers and wharfs, and piers and wharfs not under government control and not the property of Canada, together with the names of such piers and wharfs and the owners thereof, as well as the sums spent on each for years mentioned. Presented 16th June, 1899.—*Mr. Martin*.....*Not printed.*
136. Return (in part) to an order of the House of Commons, dated 15th May, 1899, for a return of all reports and recommendations of the commission appointed to investigate and settle claims for losses arising out of the Saskatchewan rebellion of 1885; also a statement of all claims presented, the amount paid in each case, also all claims presented and not entertained. Presented 20th June, 1899.—*Mr. Davis*.....*Not printed.*
137. Return to an order of the House of Commons, dated 17th May, 1899, for copies of all instructions, correspondence and reports, accounts and vouchers, for expenses connected with the expedition of Chief Engineer Coste, of the department of public works, referred to in the annual report of the minister of marine and fisheries, 1898, page 7, and also connected with the visit subsequently paid to England by Mr. Coste in the same year. Presented 20th June, 1899.—*Sir C. Hibbert Tupper*.  
*Not printed.*
138. Return (in part) to an order of the House of Commons, dated 29th May, 1899, for copies of all correspondence, telegrams and reports between the departments of militia and defence and justice or their agents, and the following claimants for compensation and damages in respect of the erection of fortifications at Macaulay Point, British Columbia, viz.: Fred. Bell, J. Jardine, W. F. Bullen, R. W. Reford, Henry Moss, William Moss, J. G. Tiarks, Charles Kent, Thornton Fell, Andreas Keating (B. L. Ker), Hans Ogilvy Price, H. F. Bishop, S. J. Pitts, and any others that may have presented claims in regard to same. Presented 21st June, 1899.—*Mr. Prior*.  
*Not printed.*
- 138a. Supplementary return to No. 138. Presented 29th June, 1899.....*Not printed.*
139. Return to an address of the House of Commons, dated 19th April, 1899, for copies of the reports of Walter Shanly, C.E., and T. C. Keefer, C.E., in connection with the proposed large locks at Iroquois and Farran's Point. Presented 23rd June, 1899.—*Mr. Taylor*.....*Not printed.*
140. Return to an order of the House of Commons, dated 19th April, 1899, for: 1. Statement of the expenditure connected with the royal military college, Kingston, every year since its foundation. 2. Of the number of graduates in each year, and of their present place of residence and occupation, as far as known to the college authorities. 3. Of all general orders or regulations relating to the employment of these graduates in the permanent corps, volunteers or other branches of the public service. Presented 23rd June, 1899.—*Mr. Casey*.....*Not printed.*
141. Return to an order of the House of Commons, dated 18th April, 1898, for copies of all instructions, correspondence, etc., in relation to the construction of wharfs at Mistassini and St. Méthode (Tékouabé); a detailed statement showing the quantity of timber, iron and stone used in the said works; by whom the said articles were furnished; the prices paid therefor to each person; the names of the carpenters and framers employed and the prices paid them per day and how much was received in cash by them, as also by the day labourers who worked with them; all other expenditure in relation to the said works; copies of all correspondence in relation to the contracts awarded to Messrs. Têtu & Savard, of St. Félicien, for making timber for the St. Méthode wharf; copies of the said contracts and of all further correspondence as to presenting payment of their accounts; a statement of the quantity of timber prepared by them, and of the amount paid to them personally. Copies of instructions issued to J. B. Carboneau, chief carpenter at the Mistassini and St. Méthode wharfs; correspondence as to cancelling of his instructions at St. Méthode and the appointment of a chief carpenter in his place. Presented 26th June, 1899.—*Mr. Casgrain*.  
*Not printed.*
142. Return to an order of the House of Commons, dated 30th March, 1898, showing the amounts paid to each and all persons who worked at the Roberval pier in 1896; the number of days worked; the prices paid; the quantity of timber and iron furnished, and the prices paid therefor; the place where the same was obtained; copies of all instructions, correspondence, etc., in relation to the said work. Presented 26th June, 1899.—*Mr. Casgrain*.....*Not printed.*

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143. Return to an order of the House of Commons, dated 27th April, 1899, for a statement of sums paid as travelling expenses to the judges of the superior court for the province of Quebec coming from outside districts to sit in the city of Montreal. 1. From the 1st of January, 1898, up to the coming into force of the statute 61 Victoria (Canada), chap. 52. 2. Since the coming into force of said statute down to the 1st of March, 1899. Presented 26th June, 1899.—*Mr. Monk. Not printed.*
144. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all tenders opened the 14th day of May, 1897, for works on the Farran's Point canal, showing the prices of different tenderers for each item and the approximate quantities upon which the tenders were extended, also the lump sum of each tender. Presented 27th June, 1899.—*Mr. Clancy. . . . . Not printed.*
145. Return to an order of the House of Commons, dated 14th February, 1898, for correspondence and reports respecting increased wharf accommodation at Pictou, Nova Scotia, in 1892 and since. Presented 28th June, 1899.—*Sir C. Hibbert Tupper . . . . . Not printed.*
146. Return to an order of the House of Commons, dated 29th May, 1899, for copies of all reports of any survey held during 1897 or 1898 of Neufrage Pond, King's county, Prince Edward Island. Presented 28th June, 1899.—*Mr. Macdonald (King's) . . . . . Not printed.*
147. Return to an order of the House of Commons, dated 10th May, 1899, for copies of all unexpired leases and unexpired renewals and modifications of leases, and of all papers and plans relating thereto of all water lots, water power and hydraulic privileges in and along that portion of the river Ottawa and its various channels within the city of Ottawa, from the westerly boundary of the said city to the line of Kent street, produced into the Ottawa river, and commonly known as the Chaudière, issued by the government to any person, persons or company, and for plans showing the position of such water lots, water power and hydraulic privileges. Also for a statement of the amount of power each lessee is entitled to use, and the date of the termination of the lease under which he is entitled to use it. Presented 28th June, 1899.—*Mr. Copp. . . . . Not printed.*
148. Certain correspondence relating to the franchise of the different provinces as the franchise for the elections to the House of Commons. Presented (Senate) 27th June, 1899, by Hon. Mr. Mills.  
*Not printed.*
149. Return to an order of the House of Commons, dated 10th May, 1899, giving the names of all the weirs now under license in the county of Charlotte, in the province of New Brunswick, with location of each, with date said licenses were issued, and with the name or names of the licensees of said weirs; also the names of all weirs licensed during 1898 that were not built and the names of licensees of said weirs, and the number of years said licenses have been granted without weirs having been built by such licensees. Presented 29th June, 1899.—*Mr. Ganong. . . . . Not printed.*
150. Return to an order of the House of Commons, dated 8th May, 1899, showing: 1. The canals and river works therewith forming the connection between the great lakes and deep water navigation at Montreal which were completed on 1st July, 1896, the depth of water in each, and the cost of each to that date. 2. The canals and connected river improvements which at that date were in course of construction or enlargement, showing the work which had been done on each, the cost to 1st July of such construction or enlargement, and the estimated cost to complete the contracts then existing and amount of each; the new contracts made since 1st July, 1896, covering work other than that completed or under contract at that date and the amount of each. 3. The estimated cost of completing these works to the proposed depth over and above the amounts involved in contracts existing on 1st July, 1896. Presented 29th June, 1899.—*Mr. Foster. . . . . Not printed.*
151. Return to an order of the House of Commons, dated 10th May, 1899, showing the number of contracts entered into by the government since the 30th June, 1897, in which there is a clause prohibiting "sweating"; the total amount involved in such contracts; the name of the respective department in which these contracts have been awarded; the names of the companies, or firms, or individuals to which such contracts have been given. Presented 29th June, 1899.—*Mr. Clarke.*  
*Printed for sessional papers.*
152. Return to an address of the Senate, dated 23rd March, 1899, showing: 1. The number of persons in the employment of the post office department on the 30th of June, 1896, and the total amount paid to said employees for the year ending said 30th June, 1896. 2. A similar return giving the same information for the year ending 30th June, 1898. 3. The number of employees in the said service on the 12th day of July, 1896, and on the 16th February, 1899. Presented 20th June, 1899.—*Hon. Sir Mackenzie Bowell. . . . . Not printed.*

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153. Return to an address of the House of Commons, dated 29th May, 1899, for copies of all orders in council, applications, correspondence, papers, plans, etc., in the departments of interior and marine and fisheries, respecting 37-29 acres or thereabouts of foreshore and tidal lands about two miles below Steveston, British Columbia, situate west and immediately adjoining section 9, range 7 west, block 3 north, N.W.D. Presented 30th June, 1899.—*Sir Charles Hibbert Tupper.*  
*Not printed.*
154. Return to an order of the House of Commons, dated 19th June, 1899, showing: 1. The amount paid in the province of Prince Edward Island since 1896 as fines for the infraction of the lobster fishery regulations, the names of persons so fined, and the amount of the fine in each case. 2. A detailed statement of the fines collected. 3. The disposition of those fines. 4. The cost of prosecution in each case. 5. The names of fishery officers receiving a share of such fines, and the amount received in each by any officer. 6. The magistrate or other officer who tried such cases. Presented 30th June, 1899.—*Mr. Martin.*.....*Not printed.*
155. Return to an order of the House of Commons, dated 19th June, 1899, for copies of all correspondence, petitions, reports, telegrams, etc., in connection with the proposed change of mail arrangements for Grand View, in Prince Edward Island. Presented 4th July, 1899.—*Mr. Martin.*  
*Not printed.*
156. Return to an address of the Senate, dated 19th April, 1899, for a statement showing: 1. What was the total average amount paid to the Ottawa Gas Co., per annum, for lighting the various government buildings during the two years ending 1898? 2. What is the total cost per annum, by the present system of lighting? 3. Were tenders called for lighting the various buildings by either gas or electricity? To what company was the contract for lighting awarded? 4. What is the total number and power of incandescent electric lights now installed in all the public buildings in Ottawa, and cost of installation, including wiring and all other apparatus? 5. What was the number and power of electric lights operated by the government electric light plant, and annual cost of the same, during the two years ending 1898? 6. What is the original cost and present value of all government electrical plant and boilers in the public buildings in Ottawa? How many men are employed to operate them? 7. Were tenders called for the wiring of any or all the government buildings in Ottawa and the supply of all electrical appliances necessary for the same? From whom were offers received and what were the respective amounts of such offers? 8. How was the parliamentary appropriation of \$75,000 for extending the government lighting plant, and the purchase of certain pumps for fire purposes, expended? What are the items of such expenditure, and to whom paid? Presented 4th July, 1899.—*Hon. Sir Mackenzie Bowell.*.....*Not printed.*
157. Return to an order of the House of Commons, dated 19th June, 1899, for copies of all correspondence, petitions, etc., in reference to the recent appointment of a postmaster at Clifton, New London, in the province of Prince Edward Island. Presented 10th July, 1899.—*Mr. Martin.*....*Not printed.*
158. Return to an order of the House of Commons, dated 19th April, 1899, for copies of specifications and plans for the construction of deep water terminal facilities at St. John, N.B., including wharfs, warehouses, elevators, tracks, etc., together with copies of tenders for the said works and of any contracts entered into therefor. Presented 18th July, 1899.—*Sir Charles Tupper.*  
*Not printed.*
159. Return to an address of the House of Commons, dated 19th April, 1899, for copies of the contract and specification in connection with the North Channel improvement, below Prescott, with copies of any supplementary agreement or agreements entered into with the contractor; also plans showing the location on which the contract was let and the present location. Presented 18th July, 1899.—*Mr. Taylor.*.....*Not printed.*
160. Return to an address of the Senate, dated 20th April, 1899, for all correspondence with the government, or any member thereof, relating to the subject of the introduction of a prohibitory liquor law by the government, together with all affidavits and other documents having relation to the vote cast upon the question of prohibition on the 29th day of September, 1898, and the alleged frauds in connection therewith. Presented 18th July, 1899.—*Hon. Sir Mackenzie Bowell.*  
*Not printed.*
161. Return to an address of the Senate, dated the 21st June, 1899, for copies of all correspondence between the department of agriculture, the Prince Edward Island Fruit Growers' Association and the provincial premier, Hon. Mr. Farquharson, with reference to experiments in fruit culture now being carried on in Prince Edward Island; said correspondence to include all instructions to Mr. Kinsman with reference to the nature of the work to be undertaken and the selection of orchards for the purpose of carrying on said experiments. Presented 18th July, 1899.—*Hon. Mr. Ferguson.*.....*Not printed.*

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- 162.** Return to an order of the House of Commons, dated 26th June, 1899, for: 1. Copies of all papers, documents, correspondence, letters, etc., in connection with the appointment of Dr. Hall, veterinary surgeon, of Quebec, for the purpose of inspecting cattle for the discovery of tuberculosis at Hébertville or elsewhere in the county of Chicoutimi. 2. In connection with any part of said work done by his brother. 3. Statement of the number of herds which he or his brother examined. 4. Statement of sums of money paid for such inspection, travelling expenses, carters, aids or assistants. 5. Statement of any sum or sums paid to David Ouellet, of Hébertville, in connection with said inspection. Presented 19th July, 1899.—*Mr. Gasgrain*..... *Not printed.*
- 162a.** Supplementary return to No. 162. Presented 26th July, 1899..... *Not printed.*
- 163.** Return to an address of the House of Commons, dated 26th June, 1899, for a copy of the final estimate or settlement of section number three (3) of the Lachine canal enlargement of 1875-1880 in detail. Presented 20th July, 1899.—*Mr. McInerney*..... *Not printed.*
- 163a.** Return to an order of the House of Commons, dated 26th June, 1899, for copies of the plans and profiles of the substructures of the highway and railroad bridges across the Lachine canal at Wellington street, Montreal, the dimensions to be in figures, also *esometrical projections* of the pivot and rest piers (abutments), showing the figured dimensions and elevations of the several parts, including turntable, circular girder, wheels and machinery. Presented 20th July, 1899.—*Mr. McInerney*..... *Not printed.*
- 163b.** Return to an address of the House of Commons, dated 26th June, 1899, for a copy of the report of the royal commission appointed to inquire into the construction of the Wellington street and Grand Trunk bridges across the Lachine canal at Montreal. Presented 29th July, 1899.—*Mr. McInerney*..... *Not printed.*
- 164.** Return to an order of the House of Commons, dated 30th March, 1898, showing: 1. How many were employed on the dredge "Prince Edward" as caretakers or otherwise since she went into winter quarters at the end of last season. 2. How many were employed during the winter 1896-97. 3. How many cubic yards were removed by dredge "Prince Edward" during the seasons of 1896 and 1897 respectively, and the cost per cubic yard each season. 4. The number of days the dredge "Prince Edward" was doing actual work in each month during the seasons of 1896 and 1897 respectively. 5. The cost of repairs for the dredge "Prince Edward" for the years ending 31st December, 1896 and 1897 respectively. Also all correspondence in connection with the dismissal of John N. Macdonald from dredge "Prince Edward," and the appointment of his successor. Presented 22nd July, 1899.—*Mr. Macdonald (King's)*..... *Not printed.*
- 165.** Return to an address of the Senate, dated 25th April, 1899, for: 1. The number of acres of land set apart for the purpose of education in the province of Manitoba and in the North-west Territories, respectively, under the authority of chapter 54, Revised Statutes of Canada, section 23. 2. The number of acres sold in Manitoba and the North-west Territories, the amount received in payment therefor, and the amount now due thereon. 3. The total sum now at the credit of said fund held by the dominion of Canada, how invested, and the rate of interest paid thereon. 4. The amount advanced out of said principal sum in aid of education in the province of Manitoba and the North-west Territories. 5. The sum recouped to the said principal out of the proceeds of the sale of lands set apart for the purpose of education, and the amount now due to the said principal sum. 6. And all correspondence relating to any further advances out of said school fund, either to Manitoba or the North-west Territories. Presented 26th July, 1899.—*Hon. Sir Mackenzie Bowell*..... *Not printed.*
- 166.** Return to an address of the House of Commons, dated 19th June, 1899, for a copy of all correspondence between the government and the boards of trade of the Dominion in regard to the passage of an insolvency law. Presented 31st July, 1899.—*Mr. Monk*..... *Not printed.*
- 167.** Return to an order of the House of Commons, dated 31st July, 1899, for a statement of the amounts paid for medical attendance and medicines for Indians in the electoral district of Yale and Cariboo during the years 1896-7, 1897-8 and 1898-9, showing to whom payments were made and amounts paid to each. Presented 31st July, 1899.—*Hon. C. Sifton*..... *Not printed.*
- 168.** Return to an order of the House of Commons, dated 25th April, 1898, for: 1. Copies of all tenders in 1897 for the supply of drugs to the North-west mounted police at Prince Albert and Battleford, and the name of the successful tenderer and a copy of the contract. 2. Copies of all tenders for the supply of drugs to the mounted police at Prince Albert and Battleford, for the year 1898; the name of the successful tenderer, and a copy of the contract. Presented 7th August, 1899.—*Mr. Davin*..... *Not printed.*

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169. Return to an order of the House of Commons, dated 8th August, 1899, for copy of correspondence in relation to the suit Esquimalt and Nanaimo Railway Company, versus the New Vancouver Coal Company, as to the ownership of the coal underlying Nanaimo harbour. Presented 8th August, 1899.—*Hon. C. Sifton*..... *Not printed.*
170. Return to an order of the House of Commons, dated 25th July, 1899, for a copy of the report of the hon. the minister of justice, on which the order in council was passed for the discharge from prison of J. K. Skelton and T. Dewan, tried and convicted of perjury before Mr. Justice Wetmore, at Battleford, October, 1897, and subsequently sentenced to a term of imprisonment; also copy of affidavits supporting the application for the discharge of the aforesaid Skelton and Dewan. Presented 8th August, 1899.—*Mr. Davin*..... *Not printed.*
171. Return to an address of the House of Commons, dated 24th April, 1899, for: (a) Copy of all correspondence or orders in council relating to the entering into an agreement by the government, or department of railways and canals, for the operating by the same of the Baie des Chaleurs Railway during the fiscal year 1896, and a copy of the contract governing the same. (b) A statement containing the period during which the road was so operated, also the total expenses directly or indirectly connected with such operation, and the total revenue derived from the same. Presented 8th August, 1899.—*Mr. Bergeron*..... *Not printed.*
172. Return to an address of the House of Commons, dated 24th April, 1899, for: (a) Copy of tenders for the letting of sections four, five, six and seven of the Soulangee canal; also a copy of advertisement for the same, and a statement of tenders moneyed out. (b) Copy of tenders for the reletting of sections four, five, six and seven of the Soulanges canal; also a copy of advertisement for same, and a statement of tenders moneyed out. (c) Copy of all correspondence or orders in council directly or indirectly relating to the letting or the reletting of the above sections. Presented 8th August, 1899.—*Mr. Bergeron*..... *Not printed.*
173. Return to an order of the House of Commons, dated 8th August, 1899, for copy of correspondence relative to the question of reducing the dock charges at Esquimalt dry dock. Presented 8th August, 1899.—*Hon. W. S. Fielding*..... *Not printed.*
174. Return to an address of the House of Commons, dated 10th July, 1899, for copy of all papers in connection with the applications made for, and the consideration of the commutation of the sentence of death on Marion Brown for murder. Presented 9th August, 1899.—*Mr. Wallace*.  
*Not printed.*
175. Return to an address of the House of Commons, dated 8th May, 1899, for copies of all cablegrams, papers, correspondence and despatches or other writing upon which the right honourable the prime minister of Canada based the statement in the house of commons on 10th June, 1898, as follows: "I have the authority of the secretary of state for the colonies to state that he approves of the principles on which the governor general acted, as based on the facts set forth in the letter of his excellency to Sir Charles Tupper." Presented 11th August, 1899.—*Sir Charles Tupper*.  
*Not printed.*

62 Victoria

Sessional Papers (No. 13.)

A. 1899

# ANNUAL REPORT

OF THE

# DEPARTMENT OF THE INTERIOR

FOR THE YEAR

1898

*PRINTED BY ORDER OF PARLIAMENT*



OTTAWA

PRINTED BY S. E. DAWSON, PRINTER TO THE QUEEN'S MOST  
EXCELLENT MAJESTY

1899

[No. 13—1899]





Department of the Interior.

*To His Excellency the Right Honourable Sir Gilbert John Elliot Murray-Kynynmond,  
Earl of Minto, G.C.M.G., &c., &c., Governor General of Canada.*

MAY IT PLEASE YOUR EXCELLENCY :—

The undersigned has the honour to lay before Your Excellency the Report of the transactions of the Department of the Interior for the year 1898.

Respectfully submitted,

CLIFFORD SIFTON,

*Minister of the Interior*

OTTAWA, 29th April, 1899.



# Department of the Interior.

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# Department of the Interior.

## ANNUAL REPORT

OF THE

# DEPARTMENT OF THE INTERIOR

FOR THE YEAR 1898.

DEPARTMENT OF THE INTERIOR,  
OTTAWA, 23rd March, 1899.

To the Honourable CLIFFORD SIFTON,  
Minister of the Interior.

SIR,—I have the honour to submit the Annual Report of the Department of the Interior for the year 1898.

This report covers all the transactions of the Department to the 31st December last. The practice which has been followed heretofore of bringing down the report to the end of the calendar year, makes it somewhat difficult to have it prepared in time for the opening of Parliament, but as such a large proportion of the work connected with immigration and the survey and settlement of Dominion lands, which form the principal administrative features of the Department, is carried on more particularly during the spring and summer months, the present practice would appear to be a desirable one, affording as it does a good opportunity to judge of the immediate results obtained from the efforts put forward to bring them about. The financial returns of the Department, however, similarly with past years, have been brought down to the 30th of June only, so as to agree in this respect with the statements of other branches of the Government service.

As will be observed from the comparative statements submitted, and from the reports of the officers in charge, the year has been a busy one in every branch of the Department, and it is very gratifying indeed to note that there has been marked improvement in the general results attained.

### DEPARTMENTAL CHANGES.

Two deaths have taken place in the Department at headquarters during the past year, namely, that of Mr. John Johnston, Geographer, who died on the 12th June, and that of Mr. Ernest Genest, of the Ordnance and Admiralty Lands Branch, who died on the 1st January of last year.

In the outside service of the Department, there were also two deaths, that of Mr. A. M. Burgess, Commissioner of Dominion Lands, who had held that office at headquarters, since the 1st of April, 1897, and who died on the 25th February, 1898; and that of Mr. J. I. Dufresne, D.T.S., of the Topographical Surveys Branch, who also died on the 25th February, 1898.

Mr. J. G. Turriff, of Alameda, N.W.T., was appointed to succeed Mr. Burgess, as Commissioner of Dominion Lands, on the 8th July last.

It may be noted that during the past year it was deemed advisable, in the public interest, to appoint all Dominion Lands Agents in Manitoba and the North West Territories, Crown Timber Agents for the districts which they respectively administer, and for similar reasons all Homestead Inspectors have been appointed Forest Rangers. The duties attaching to the offices of Crown Timber and Dominion Lands Agents, as well as those of Homestead Inspectors and Forest Rangers, are so closely allied that it was considered to be in the public interest to merge these offices, both as a matter of economy and of convenience.

Some changes have also been made in the names of land districts. The district formerly known as "Souris" has been changed to "Brandon," that of "Little Saskatchewan" to "Minnedosa," "Qu'Appelle" to "Regina," and "Coteau" to "Alameda." With the exception of these, all the land districts in Manitoba, the North West Territories and British Columbia were already designated by the names of their chief towns, and it was felt that the same rule should be followed everywhere, as there can be no doubt that the name of the chief town is a much better indication of the situation of a district than was furnished by the name of a river or mountain near to or within its borders.

#### HOMESTEADS AND SALES.

##### HOMESTEADS.

The following is a comparative statement of the homestead entries and sales which have been made at the several agencies of the Department during the calendar years 1897 and 1898, respectively :—

	Calendar year 1897.	
	No. of entries.	acres.
Homesteads.....	2384	381,440
Sales.....		22,336
	Calendar year 1898.	
	No. of entries.	acres.
Homesteads.....	4848	775,680
Sales.....		47,186



## Department of the Interior.

The following statement shows the number of homestead entries reported in each year since 1874, and the number and proportion of those entries which have been cancelled for non-fulfilment of the conditions of entry.

Departmental Year Ended.	HOMESTEADS.			PRE-EMPTIONS.		
	Number of Entries.	Number Cancelled.	Percentage.	Number of Entries.	Number Cancelled.	Percentage.
31st October, 1874	1,376	890	64	643	613	95
" 1875	499	303	60	391	229	58
" 1876	347	153	44	263	136	51
" 1877	845	461	54	594	360	60
" 1878	1,788	1,381	77	1,580	935	59
" 1879	4,068	2,052	50	1,729	1,463	84
" 1880	2,074	681	32	1,004	498	49
" 1881	2,753	939	34	1,649	795	48
" 1882	7,483	3,508	46	5,654	3,234	57
" 1883	6,063	1,853	30	4,120	1,741	42
" 1884	3,753	1,156	30	2,762	1,126	40
" 1885	1,858	611	32	653	462	70
" 1886	2,657	840	31	1,046	467	44
" 1887	2,036	474	23	585	286	49
" 1888	2,655	717	27	454	265	58
" 1889	4,416	1,832	41	1,355	891	65
" 1890	2,955	895	30	371		
" 1891	3,523	1,134	32			
" 1892	4,840	1,707	35			
" 1893	4,067	1,294	31			
" 1894	3,209	1,072	33			
31st December, 1894	3,174	1,007	31			
" 1895	2,394	788	32			
" 1896	1,857	347	18			
" 1897	2,384	293	12			
" 1898	4,848	155	3			

It will be seen from this latter statement that the number of homestead entries granted during the past year is the largest since 1883; that it is over twice as large as the number granted in 1897, and over three times that of 1896. It will also be observed that while there were 1,707 entries cancelled in 1892, and 1,294 in 1893, the number of cancellations has fallen this year to 155, but three per cent of the total number of entries granted, as compared with a percentage of 35 and 31, respectively, in 1892 and 1893. This would appear to be a very good indication that the number of persons who formerly took up land for other than farming purposes is gradually growing less, and that those now making entries are *bona-fide* farmers who intend to earn title to their holdings by actual settlement and the performance of the duties prescribed by the Dominion Lands Act.

STATISTICAL statement *re* homesteaders, comparing the reports of the Dominion Lands Agents for the calendar year 1898, with those for the calendar year 1897.

NATIONALITIES.	1897.		1898.	
	No. of Entries.		No. of Entries.	
Canadians from Ontario.....	455		1,019	
"    Quebec.....	75		126	
"    Nova Scotia.....	10		29	
"    New Brunswick.....	8		18	
"    Prince Edward Island.....	9		9	
"    British Columbia.....	2		7	
"    Manitoba.....	119		232	
"    North-west Territories.....	25		94	
		703		1,534
Persons who had previous entry.....		396		620
Canadians returned from the United States.....		54		117
Newfoundland.....				1
English.....		300		489
United States.....		164		581
Irish.....		33		75
Scotch.....		83		161
French.....		55		63
Belgians.....		15		44
Italians.....		1		2
Swiss.....		1		
Hollanders.....		1		1
Germans.....		100		105
Austro-Hungarians.....		358		733
Syrians.....				3
Danes, other than Icelanders.....		6		6
Icelanders.....		9		46
Swedo-Norwegians.....		23		44
Russians, other than Mennonites and Poles.....		69		100
Mennonites.....		23		118
Poles.....		12		3
Chinese.....				1
Roumanians.....				1
		2,406		4,848
Number of souls.....		7,404		15,083

## Department of the Interior.

STATEMENT showing the Number of Entries made during the Calendar Years 1897 and 1898 respectively, by persons coming from the various States and Territories of the American Union.

States.	1897.	1898.
	No. of Entries.	No. of Entries.
California.....	1	3
Colorado.....	1	5
Connecticut.....	1	2
Dakota.....	63	135
Idaho.....	5	21
Indiana.....	2	1
Illinois.....	6	14
Iowa.....	2	13
Kansas.....	11	24
Kentucky.....	1	.....
Maine.....	.....	5
Maryland.....	1	2
Massachusetts.....	4	10
Michigan.....	25	97
Minnesota.....	22	105
Missouri.....	3	4
Montana.....	2	19
Nebraska.....	9	27
New Hampshire.....	.....	2
New Jersey.....	2	1
New York.....	7	16
Ohio.....	1	2
Oregon.....	3	4
Pennsylvania.....	1	16
Rhode Island.....	.....	3
Tennessee.....	.....	2
Texas.....	9	4
Utah.....	21	112
Vermont.....	1	1
Virginia.....	.....	1
Washington.....	7	20
Wisconsin.....	5	24
Wyoming.....	2	3
Totals.....	218	698

This also is a satisfactory showing, as it will be noticed that the number of entries by persons from the United States, as compared with the previous year, has been more than trebled during the past season—a result which says much for the success of the work being done by the Immigration branch of the Department.

### SALES OF LANDS.

A great impetus has been given of late years, especially since 1896, to the purchase of lands for actual occupation. Increased prosperity has enabled our farmers to add to their holdings and extend their operations, and has induced new men, not only as homesteaders but as purchasers, to cast in their lot with this country. The following statement of sales during the past six years, by the Hudson's Bay Company and the most important Railway Companies having land grants from the Government, shows conclusively that there has been a marked progress in this relation, as compared with preceding years :—

STATEMENT of Land Sales by Railway Companies having Government Land Grants and by the Hudson's Bay Company.

NAME.	1893.		1894.		1895.		1896.		1897.		1898.	
	Acres.	Amount.	Acres.	Amount.	Acres.	Amount.	Acres.	Amount.	Acres.	Amount.	Acres.	Amount.
Hudson's Bay Company.....		\$	7,526	\$ 48,225	4,431	\$ 23,209	9,240	\$ 52,410	10,784	\$ 53,277	37,923	\$ 183,890
Alberta Railway and Coal Company.....	10,108		nil.	nil.	28,661	28,661	nil.	nil.	320	320	49,244	49,244
Canadian Pacific Railway Company.....	93,184	296,288	43,155	131,623	55,453	176,950	66,624	220,360	135,681	431,095	242,134	757,792
Manitoba South-Western Colonization Rail- way Company.....	14,164	57,559	6,312	28,003	5,623	23,330	21,254	88,568	63,800	234,644	106,473	363,982
Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company.....	1,603		640		2,391		236		2,524		22,534	
Calgary and Edmonton Railway Company..	11,260		11,035		46,815		10,553		9,436		15,481	
Total.....	130,319	862,955	68,628	207,856	143,374	251,150	108,016	361,338	222,545	719,336	473,789	1,364,908

# Department of the Interior.

## PATENTS.

STATEMENT showing the number of Letters-Patent issued by the Department in each year since 1874, and the number of those issued which have since been cancelled in each year.

Year.	Number Issued.	Number Cancelled.
Departmental Year ended 31st October, 1874.....	536	6
"          "          1875.....	492	4
"          "          1876.....	375	4
"          "          1877.....	2,156	13
"          "          1878.....	2,597	32
"          "          1879.....	2,194	57
"          "          1880.....	1,704	41
"          "          1881.....	1,768	11
"          "          1882.....	2,766	11
"          "          1883.....	3,591	16
"          "          1884.....	3,837	24
"          "          1885.....	3,257	18
"          "          1886.....	4,570	17
"          "          1887.....	4,599	26
"          "          1888.....	3,275	34
"          "          1889.....	3,282	30
"          "          1890.....	3,273	20
"          "          1891.....	2,449	35
"          "          1892.....	2,955	27
"          "          1893.....	2,936	16
"          "          1894.....	2,553	15
Year ended 31st December, 1894.....	2,682	16
"          "          1895.....	2,118	12
"          "          1896.....	2,665	20
"          "          1897.....	2,972	17
"          "          1898.....	3,037	19

## CORRESPONDENCE.

The following statement shows the number of letters received and sent by the Department in each year since its establishment :—

Departmental Year ended 31st October.	Letters Received.	Letters Sent.	Total.
1874	3,482	4,150	7,632
1875	1,974	2,189	4,163
1876	2,256	3,097	5,353
1877	3,137	3,677	6,814
1878	4,642	6,009	10,651
1879	5,586	6,179	11,755
1880	8,222	9,940	18,162
1881	13,605	15,829	29,434
1882	25,500	30,300	55,800
1883	27,180	33,500	60,680
1884	27,525	33,386	60,911
1885	33,970	43,997	77,967
1886	60,964	67,973	128,937
1887	47,845	60,890	108,735
1888	43,407	52,298	95,705
1889	48,316	50,500	98,816
1890	36,200	36,008	72,208
1891	38,000	36,267	74,267
1892	41,990	42,203	84,193
1893	50,794	48,145	98,939
1894	48,619	50,840	99,459
1895	49,991	45,898	95,889
1896	47,501	44,238	91,739
1897	65,714	64,147	129,861
1898	88,913	87,845	176,758

The number of registered letters during the Departmental year 1898 was :—

Received, 2,584 ; sent, 6,914.

## IMMIGRATION.

In part II will be found the reports of the various agencies at work in promoting immigration and welcoming immigrants ; the whole prefaced by the report of the Superintendent of Immigration, and the section relating to Great Britain and the continent of Europe, by the High Commissioner's report.

All possible activity has been maintained in this branch of the Department, and with excellent results, as the foregoing schedules amply show.

It may be said with respect to the year 1898 that not only has there been a very decided increase in the number of immigrants arriving, but the number stirred up to come by our agents, and who are now making preparations to that end, is so great that a steady stream, temporarily interrupted by the winter season, may be said to have set in, and now the emigrating classes of Great Britain, of Europe and of the United States of America are looking to Canada as their goal. The varied and extensive resources of this country have at length aroused the interest both of capitalists and of agriculturists in Europe and America, and we are beginning to reap the benefit in the investment of their money for the development of our resources, and an increased influx of population for the settlement of our great public domain.

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The natural outcome of all this will be such that the expenditure we are making in the immigration service, and in advertising our country abroad, will be more than justified. It will mean an immeasurable extension of our trade and commerce, the development of our industries, the covering of the vast areas of arable lands yet remaining at the disposal of the Crown with a happy and prosperous farming population, and the consequent lightening of our national burdens, such as they are, by the presence of a greater number of shoulders to carry them. These and other advantages may be looked for to accrue to Canada by pushing immigration, and I am sure that all patriotic Canadians will wish to have it pushed by all legitimate means, and will not grudge the expenditure necessary.

### THE DOUKHOBORS.

In the month of July last information was received at the Department that the religious sect in Russia known as Doukhobors, some eight thousand in number, were seeking to emigrate, and with that end in view, communication was begun and later on delegates were sent to Canada to examine such parts of the country as might be found to offer the conditions necessary to the successful settlement of the whole community.

Shortly afterwards, two representatives of the body, namely, Prince Hilkoﬀ, the nephew of the Russian Minister of Railways, and a warm sympathiser of the Doukhobors, and Mr. Aylmer Maude, of Purleigh, Essex, England, who had formerly been a merchant at Moscow, called at the Department for the purpose, if possible, of effecting arrangements which would facilitate the moving of these people to the North West Territories, provided the natural conditions of the country were found to be suitable for that purpose. Prince Hilkoﬀ and Mr. Maude were advised to proceed to the North West, along with two families of Doukhobors who accompanied them, and to make their inspection of the lands, and they were told that in the meantime the subject of their proposition would receive the careful consideration of the Department.

It may prove interesting to say a few words here as to the origin and national character of the Doukhobors, and I can think of no better way of doing so than by quoting in full the following paragraphs, which appear in the introduction by Mr. James Mavor, professor of political economy at the University of Toronto, to a book, entitled "Christian Martyrdom in Russia," by Mr. Vladimir Tchertkoﬀ, of Purleigh, Essex, England, who has taken a very active part in the emigration of these people to Canada. Professor Mavor expresses himself as follows :—

"The Doukhobortsi (Spirit-Wrestlers) or as they prefer to call themselves, Members of the Universal Brotherhood, seems to have originated as a separate sect in a village on the southern frontier of Russia in the middle of the eighteenth century. Their doctrines infected other peasants in other parts of Russia, and ere long attracted the attention of the government and of the dignitaries of the Orthodox Greek Church. A number of the sectaries were banished to Siberia, some of them making small settlements on the borders of Manchuria, where, it may be mentioned, their descendants were visited by Prince Krapotkin while he was aide-de-camp to the Governor-General of Eastern Siberia about 1868.

"In the reign of Alexander I, a tract of land on the northern shore of the Sea of Asov was set apart as a kind of Doukhobor Reserve, and an agricultural commonwealth was established by them under the leadership of an ex-sergeant of the Russian

army, called Kapùstin. Kapùstin is described as having 'governed them with a practical sense amounting to genius.' Here the members of the Universal Brotherhood lived for more than fifty years undisturbed. The idea of isolating the Doukhobors was evidently intended to put a stop to their proselitising tendencies, but on these manifesting themselves, notwithstanding their comparative seclusion, their leader Kapùstin was arrested and the community broken up. Since then their doctrines have been held by at most at any one time about 20,000 peasants in various villages in southern Russia. Their religious beliefs have all along been similar to those of the Society of Friends. From time to time the attention of the government and of the ecclesiastical authorities has been drawn to them. The government objected to them on account of their refusal to render military service; while the ecclesiastical authorities disapproved of their principles and practices because these are opposed to those of the Orthodox Greek Church.

"In consequence of this disapproval the people have been subject to repeated banishments, and their prosperous homes have again and again been broken up. In 1840 and in 1850 they were banished to Trans-Caucasia near the Turkish frontier. For some years they were allowed to live their life there without molestation, and though the inhospitable climate of the Caucasus produced a high rate of mortality, yet some of the villages were exceedingly prosperous, particularly those in the neighbourhood of Kars where they are said to have cultivated their land with such assiduity as greatly to increase the product of the soil.

"Up to 1887 the Russian Government administered the conscription laws with comparative laxity, and in consequence non-resisting peasant sects were allowed to remain in comparative immunity, and during this period many of them became the pioneers of Russian colonization. From 1887 onward, however, the military necessities of Russia compelled the authorities to carry out the conscription laws with greater stringency, and then began the series of recent persecutions, especially of the Doukhoborts, which have led to the present situation as described in this book . . . . .

"In 1897, Mr. Tchertkoff, the author of this book, who was formerly an officer in the Russian army, visited St. Petersburg, and had an interview with Mr. Pobièdonòstseff, the High Procurator of the Holy Synod, the result of which was an intimation to himself that it would be convenient for him if he withdrew from Russia. The visit of the Empress Maria, the mother of the present Czar, to the Caucasus was, however, taken advantage of by the Doukhobors and their sympathisers and their case was put before her. It is understood that the Dowager Empress enlisted the sympathies of the Czar and secured for the Doukhobors permission to leave the country. This permission was given in February, 1898, and then the Doukhobors immediately began to make assiduous enquiries about suitable places to which they might emigrate."

The following quotations would appear to leave no doubt as to the high moral character of the Doukhobors :—

(From a letter, dated Moscow, 20th August, 1898, addressed to Professor Mavor, by Count Leo Tolstoi.)

- "1. The Doukhoborts are the best farmers in Russia.
- "2. They would use land and seeds given to them, in the best way.
- "3. They live the most chaste family life.



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"4. They would adapt themselves to any climate.

"5. They would send their children to the common school if the children were not obliged to receive religious teaching."

(From a letter, dated 27th May, 1898, addressed to the Foreign Office by the British Consul at Batoum.)

"The Doukhobors, since their settlement in the Trans-Caucasus, have, by their good behaviour, diligence, sobriety and hard working qualities, brought nothing but prosperity to the barren localities in which they were originally settled."

(From a letter dated 17th October last, addressed to the Superintendent of Immigration by Mr. J. G. Colmer, Secretary to the High Commissioner for Canada in London.)

"From all the High Commissioner can ascertain, he believes the Doukhobortsî consist largely of agriculturists, and that they are a thrifty, steady and law-abiding people. They appear to be somewhat similar in many ways to the Mennonites, and if they go to Canada in any numbers it is hoped they will prove to be successful settlers."

(From a letter addressed to the Minister of the Interior, on the 25th October, 1898, by the High Commissioner for Canada in London.)

"From all I can learn these Doukhobortsî are steady, hard-working and thrifty and are likely to be an acquisition to the country."

It was further ascertained that these people, in anticipation of their moving to another country, had succeeded in raising a special immigration fund of about \$29,000, and that this sum would be supplemented by the Society of Friends in England, who had become interested in them. It was also learnt that the first two parties that were to be sent out, composed of at least 2,000 souls each, possessed private means aggregating \$45,000, or even more.

Under all the circumstances, it was decided that it would be in the interest of Canada to offer every possible inducement, consistent with the general immigration policy of the Government, for the settlement of the Doukhobors in the North West Territories, as it was felt that in a few years, judging from the previous experience of these people, not only would they be an acquisition to the country, but that they would, in a very much shorter time, be more than self-sustaining. The following proposition was therefore submitted to Prince Hilkoﬀ and Mr. Maude, after their return from the North West where they had succeeded in selecting suitable sites for the proposed colonies near Fort Pelly, in the north-eastern portion of the District of Assiniboia. The proposition made was that the Department would pay over, on behalf of these people, a sum equal to one pound sterling per head, for each man, woman and child who might be reported at the office of the Commissioner of Immigration at Winnipeg; that is to say, that instead of paying this amount to the steamship agents, which is the usual bonus granted, under ordinary circumstances, to these agents on the continent of Europe, it would be paid for the benefit of the people themselves. It was further proposed that a committee should be appointed in Winnipeg, under which all arrangements would be made in connection with the settlement of the Doukhobors on their lands, such committee to be fully authorized to disburse all moneys placed to the credit of the Doukhobor Fund to the best possible advantage, and to receive all moneys donated by interested

persons in the Old Country as well as in America. Regarding the commission to be paid by the Government, as above mentioned, it was further understood that no portion of this money should be used for transportation expenses, but that it should be used exclusively, under the direction of the committee, for the purpose of assisting in the maintenance of the Doukhobors after arrival, and the purchase of such supplies as might be necessary in establishing the colony.

This proposition was considered satisfactory and was accepted by the representatives of the Doukhobors.

Arrangements were immediately completed for the immigration of some four thousand of these people. The steamships "Lake Huron" and "Lake Superior" were specially chartered by the friends of the Doukhobors in England, and these boats landed safely at Halifax, the former on the 20th January, having on board over 2,000 souls, and the latter on the 27th January, with about 2,000 passengers. Persons composing the first contingents that came by the "Lake Huron" were found to be perfectly free from contagious diseases and were immediately shipped to Winnipeg, where proper accommodation had been previously provided for them. The second contingent that came by the "Lake Superior" had to be detained in quarantine at Halifax, as unfortunately a case of small-pox had developed during the voyage. They have since, however, proceeded on their journey westward, and have joined the first party.

I think that it may safely be said that all those who have had an opportunity of seeing the Doukhobors on their arrival at Halifax, or on their way to the west, have been favourably impressed with their fine physical appearance, which would seem to mark them out as being in every way fitted to successfully undertake farm life on our western prairies, where the climatic conditions are almost identical with those of the Trans-Caucasus. This coupled with the not less important fact that they are skilful agriculturists, thrifty and moral in character, affords good ground for congratulations to those who have been instrumental in their coming to this country, especially when it is considered that this has been brought about without incurring any expenditure of public moneys, other than about the amount usually paid in the form of bonuses for continental emigrants.

The thanks of the Department are due to the Canadian Pacific Railway Company, to the Beaver Steamship Company, to Prince Hilkoﬀ, Professor Mavor and Mr. Aylmer Maude, for the kindly interest which they have taken in this matter.

#### THE GALICIANS.

It is estimated that there are now over ten thousand Galicians settled in Manitoba, Assiniboia, Alberta and Saskatchewan, the largest settlements in Manitoba being at Stuartburn, Dauphin and Pleasant Home, with smaller communities at Gonor, Brokenhead and St. Norbert. There are four colonies in Assiniboia, three being situated near Yorkton and a smaller one at Grenfell, while in Alberta the Edna Colony, forty miles from Fort Saskatchewan, contains some five hundred families.

I took advantage of the opportunity which was afforded me when visiting the west last fall to make a personal inspection of one of the Galician settlements in the Province of Manitoba, and I am glad to say that as a result I was very favourably impressed with the progress which they have made during the comparatively short time that they

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have been on their holdings. They were found comfortably housed, and even those who had arrived in the country last spring had managed to grow sufficient grain and vegetables to meet all their requirements. In fact, the great majority of the people were in every way not only well able to care for themselves, but there was every indication that they would ere long prove to be successful farmers. It is gratifying to note that the prejudice which was at first entertained by many as to this class of settlers is gradually disappearing, as their habits and mode of life are becoming better known.

It may be stated further that the Department has had a special agent detailed to the various Galician settlements with a view to making a special inspection of each family that has taken up land there within the last four or five years. This inspection, although well under way, has not yet been completed, but the reports that have been received so far show conclusively that the Galicians are possessed of the qualities necessary to successful farming, and that those amongst them who have engaged in that pursuit since their arrival in Manitoba or the North West Territories have given ample proof of their ability to use to the best advantage possible to themselves and to the country the opportunity which has been afforded to them by the Government of acquiring free homesteads and of enjoying the privileges of Canadian citizenship.

### THE YUKON TERRITORY.

Pursuant to the provisions of the Act assented to by Parliament on the 13th June, 1898, intituled "An Act to provide for the Government of the Yukon Territory" (61 Victoria, Chapter 6), an Order in Council was passed, on the 7th July last, authorizing the employment and defining the duties of the various chief executive officers and clerks whom it was deemed necessary to appoint, in order to properly carry on the work connected with the administration of the Territory.

Mr. James M. Walsh, of Brockville, Ont., who had in the month of August, 1897, been appointed Commissioner of the Yukon Territory, was compelled, through personal reasons, to ask to be relieved of the duties of this office, and his resignation was accordingly accepted. During the comparatively short period that he occupied this important position, Mr. Walsh displayed both tact and judgment in the conduct of the responsible work entrusted to him, and the intelligent manner in which he coped with the difficulties attendant upon the organization of the various services of the Department in the district, is worthy of commendation.

On the 4th July last, Mr. William Ogilvie was appointed to succeed Mr. Walsh as Commissioner. Mr. Ogilvie's qualifications to discharge the duties of this office creditably both to the country and to himself, are too universally known to need dwelling upon at any length in this report. The personal knowledge which he has gained of the requirements and capabilities of the Yukon district, with which he has been closely identified for the past twelve years, his superior administrative abilities, and his high moral character and professional attainments, specially fit him for this position of responsibility, and are, I think, a sufficient guarantee of his ability to properly safeguard the important interests that have been confided to his care.

Mr. E. C. Senkler, of Nelson, B.C., was appointed Gold Commissioner on the 1st of November last, in lieu of Mr. Thomas Fawcett, who has been placed in charge of the

general survey work of the district ; Mr. W. H. P. Clement, barrister, of Toronto, was appointed Legal Adviser to the Commissioner and the Council on the 7th October last, in lieu of Mr. W. C. Wade, resigned ; Mr. J. E. Girouard, of Arthabaskaville, P.Q., was appointed Registrar of the district on the 27th July last, and Mr. John T. Lithgow was named to the position of Comptroller on the 14th of the same month.

By Orders in Council, dated respectively 7th July and 7th and 8th October last, the following persons now compose the Yukon Council, as authorized to be constituted under section 5 of the Yukon Territory Act, to aid the Commissioner in the administration of the district, namely, Mr. William Ogilvie, Commissioner ; Justice C. A. Dugas, who has been appointed Judge of the Territory in lieu of Mr. Justice McGuire who has been re-transferred to Prince Albert, N.W.T.; Mr. W. H. P. Clement, Legal Adviser ; Mr. Jos. E. Girouard, Registrar, and Mr. Samuel B. Steele, Superintendent of the North West Mounted Police.

It is regretted that the report of Mr. Ogilvie upon the operations of his office during the past year should not have been received in time for publication in the annual report of the Department. It is expected, however, that the same will reach here at an early date, and as soon as it is received no time will be lost in having it published as an appendix to the report.

Attention is called in the mean time to the report of the ex-Commissioner, Mr. Walsh, dated 15th August last, which contains much valuable and interesting information with regard to the conditions and prospects of the district at that time, also to the very able report of the Surveyor General upon the survey works that have been conducted under his direction in the Yukon Territory during the past season.

It is very satisfactory to note that the means that have been employed so far to ensure the peace and good government of this distant part of the public domain, have been entirely successful. While the lack of proper communication with the district must necessarily remain an obstacle in the way of developing its great mineral wealth, the results obtained last year, as evidenced by the large increase in the revenue derived from that source, would appear to justify the most optimistic expectations as regards the possibilities of that country as a gold-bearing field.

Referring to the question of charges that have been made from time to time, chiefly through the press, against certain Government officials in the Yukon Territory, of improper acts in the discharge of their duties, attention is called to that portion of Mr. Walsh's report of the 15th August last, above referred to, dealing with this particular matter. While there would appear to be no doubt, from this report, as to the groundlessness of the accusations that have been made, I may say that it was nevertheless considered desirable, both in justice to the public and to the officials themselves, to have a thorough investigation, and thus afford an opportunity to persons having complaints to make to substantiate the same by proper evidence. With that end in view, a commission, under the Great Seal, was issued in the month of October last, appointing Mr. Ogilvie a commissioner, under the provisions of Chapter 114 of the Revised Statutes of Canada, to enquire into and report upon the charges above referred to. This commission was transmitted to Mr. Ogilvie, at Dawson City, on the 10th of October last, but his report on the result of the investigation has not yet reached the Department.

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### OPERATIONS OF THE TOPOGRAPHICAL SURVEYS BRANCH.

The surveys performed by this branch of the Department have again been on a more extensive scale than for a number of years past. Twenty-three parties have been employed; the majority of them were engaged upon township sub-division surveys, five were surveying townsites, mining claims and exploring in the Yukon territory, and one carrying on the irrigation surveys.

#### SUB-DIVISION SURVEYS.

The greater proportion of the township sub-division surveys were conducted in the north-western portion of Manitoba, from Lake Manitoba to the northern slope of Duck Mountains. This includes the Dauphin Lake and Swan River districts, where land for settlement purposes has been in great demand.

Mr. J. L. Cote was engaged in the early portion of the season making a re-survey of the village lots at Whitemouth, and subdividing some townships in that locality. He also examined the country between the head of the Roseau River and Whitemouth Lake, with a view to sub-dividing the lands next year, if found suitable for settlement. It has been reported that some Minnesota Scandinavians and others are thinking of settling in this locality.

Mr. Henry Lawe re-surveyed a few townships near the town of Gimli, on the south-west side of Lake Winnipeg. He also made a re-survey of the town site. In both cases the posts and other marks of the original surveys had, with few exceptions, become obliterated.

Mr. J. E. Woods was employed for a time renewing the marks of the original survey in township 22, range 14, west of the principal meridian. Settlers had taken up land in this township, but were unable to locate their sections, as in some cases the lines had become completely overgrown, and in other cases the marks of the original survey had disappeared owing to fires and other causes. Laurier station on the line of the Lake Manitoba Railway, is about six miles to the west of this township. On section 11 there is a steam saw mill, at which spruce from the north and east of Beavermud Lake is cut into building lumber.

Mr. Woods also sub-divided several townships at Dog Lake, near the narrows of Lake Manitoba. There appears to be no immediate prospect of a railway along the east side of Lake Manitoba, but it has been suggested that colonization might be facilitated by placing a steamer between Westbourne and Fairford. Beds of limestone crop up at the surface in places near Dog Lake, which could be easily quarried for building purposes and for the manufacture of lime.

Messrs. A. F. Martin and James Dickson were employed sub-dividing townships at Dauphin Lake. Several farmers have settled on Fork River in township 29, range 19, and all express themselves as highly satisfied. There are also a few settlers, some of them Galicians, on Fishing River. They are clearing up the land, have good buildings, and are prosperous. A station of the Lake Manitoba Railway and Canal Company's line, now known as the Canadian Northern Railway, is in section 26. Mr. Martin renewed the corners in township 26, range 19, the marks of the original survey having been destroyed by fire. Ten years ago scarcely any cultivation was done in this township, yet the fine wheat fields and comfortable dwellings now seen on every hand convey

the impression that the lands have been settled upon a number of years. The gap between the Riding and Duck Mountains forms what is known as the Gilbert Plains. The soil is of remarkably good quality, and there is an abundance of timber and immense quantities of hay and good water.

The surveys in the Swan River district were in charge of Messrs. Belanger, Hubbell and Desmeules. Settlement in the Swan River valley has made very rapid progress, so rapid indeed that nearly all the lands surveyed in 1897 were taken up. The development is due in a great measure to the construction of the Canadian Northern Railway. During the past season the road was extended a distance of 54 miles, and it is understood that the company propose to further prosecute construction in the spring. Within recent years immense areas of fine large spruce in the Duck Mountains have been destroyed through the extremely careless handling of fires. Some action may become necessary to prevent further loss of these valuable forests.

A small contract was let to Mr. W. A. Ducker for the completion of the sub-division of a portion of township 22, range 26, west of the principal meridian. This was the only work performed under contract.

Messrs. C. F. Aylsworth and A. J. Brabazon were employed renewing the markings of corners, which had become obliterated, and making re-surveys of townships near Yorkton, Assiniboia. The farmers in this locality are principally engaged in stock raising, many of the townships being exceptionally favourable for this purpose. During the past season there was a great demand for cattle and such good prices prevailed, that ranchers have been tempted to very materially increase the size of their herds. A number of Galicians have settled on the "Sliding Hills" and are doing as well as can be expected with the limited means at their disposal.

Mr. J. Lestock Reid had charge of the surveys in the Prince Albert district. He renewed the survey marks of the St. Laurent settlement and a few adjoining townships. The surrounding country and for a considerable distance to the east is particularly well adapted for settlement. Mr. Reid also surveyed a portion of the 12th base line. From range 11 westerly to the south branch of the Saskatchewan River the soil is exceptionally good.

Mr. B. J. Saunders was employed at various surveys throughout southern Alberta. He re-marked the corners of blocks in portions of Macleod and Banff townsites and subdivided parts of a number of townships for the purpose of locating settlers.

Messrs. A. C. Talbot, J. K. McLean and C. C. DuBerger were in charge of surveys near Edmonton, northern Alberta. Coal is obtained on Conjuring Creek, township 48 range 27, west of the 4th meridian, and on Sturgeon River, township 55, range 2, west of the 5th meridian. It is used by some of the settlers, who speak very highly of its heating qualities. In the vicinity of Lake St. Anne large quantities of valuable timber have been destroyed by fire through the carelessness and indifference of some of the settlers.

The surveys in the railway belt, British Columbia, were again in charge of Mr. J. E. Ross. His work was to a considerable extent scattered, and was largely to meet the immediate requirements of settlers.

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### SETTLEMENT SURVEYS COMPLETED TO DATE.

Hereunder will be found the usual table of subdivision or settlement survey work completed each year since the commencement of the surveys, with the result of last season's operations added :—

	Acres.	Number of Farms of 160 acres each.
Previous to June, 1873 . . . . .	4,792,292	29,952
In 1874 . . . . .	4,237,864	26,487
1875 . . . . .	665,000	4,156
1876 . . . . .	420,507	2,628
1877 . . . . .	231,691	1,448
1878 . . . . .	306,936	1,918
1879 . . . . .	1,130,482	7,066
1880 . . . . .	4,472,000	27,950
1881 . . . . .	8,147,000	50,919
1882 . . . . .	10,186,000	63,662
1883 . . . . .	27,234,000	170,212
1884 . . . . .	6,435,000	40,218
1885 . . . . .	391,680	2,448
1886 . . . . .	1,379,010	8,620
1887 . . . . .	643,710	4,023
1888 . . . . .	1,131,840	7,074
1889 . . . . .	516,968	3,231
1890 . . . . .	817,075	5,106
1891 . . . . .	76,560	476
1892 . . . . .	1,395,200	8,720
1893 . . . . .	2,928,640	18,304
1894 . . . . .	300,240	1,876
1895 . . . . .	406,240	2,539
1896 . . . . .	506,560	3,166
1897 . . . . .	428,640	2,679
1898 . . . . .	859,840	5,374
Total . . . . .	80,040,975	500,252

### YUKON TERRITORY.

Messrs. Cadenhead, Gibbon and Cautley were engaged surveying mining claims, townsites and lots, when not employed in the Gold Commissioner's office assisting Mr. Fawcett with the large amount of business transacted. Early in the season a survey was made of creek claims on Dominion Creek, one of the largest tributaries of Indian River. Surveys were made of placer claims on Sulphur Creek, hill and bench claims on Eldorado, and a micrometer traverse of Indian River was carried to the mouth of Sulphur Creek. A portion of the townsite of Selkirk and some town lots at West Dawson were also surveyed during the season. The survey at Selkirk was urgently needed as the inhabitants were building in a very irregular manner. In the fall of the year an auction sale of lots was held and a considerable number disposed of.

### DEATH OF J. C. CADENHEAD, D.L.S.

I have to report with much regret the death of Mr. J. C. Cadenhead, D.L.S., of which occurrence Mr. Fawcett has furnished the following particulars :—

“ One of the saddest events in connection with the history of the Yukon Territory uring the year 1898 was the untimely death of the late J. C. Cadenhead, Dominion

Lands Surveyor. He left Dawson, accompanied by a party of men, on the 12th day of September, under instructions to make a track survey of Indian River to the mouth of Sulphur Creek and then make a detailed survey of Sulphur Creek itself. There were no notes to indicate that any action had been taken in reference to the Indian River, but the party reached the point of Discovery on Sulphur Creek early in October and began operations. Members of his party informed me that at the time he started for Dawson his health was very poor and he felt himself unable to work; he therefore started for town on the 25th October unaccompanied by any member of his party. His body was found on the morning of the 27th October, by the North West Mounted Police, frozen in the ice, head and shoulders above water, near the mouth of the Klondyke—not more than a hundred feet from occupied houses. He had attempted to cross the river on the ice, which in some places was quite safe, but in a few spots, where the current was strong, but recently formed. It was in one of these treacherous places he dropped through and had been unable to climb out. The pack on his back kept him from going through, but also left him powerless to help himself. This, combined with the fatigue resulting from his long trip, undoubtedly was the cause of his death. The body was surrounded by solid ice which had to be cut away to extricate it. The notes and accounts of deceased had been thrown to some distance on the ice, showing his desire to preserve them from destruction as far as possible. The burial, which took place on the following Sabbath from the Presbyterian church, of which he was an official member, was attended by all the Government officials of Dawson, and the members of his own profession acted as pall-bearers. His burial place is a high point overlooking the Klondyke River, where a new public cemetery has been laid out. His widow and three small children reside at St. Charles, in the Province of Manitoba."

Mr. J. J. McArthur was engaged in exploring the district drained by the Stewart and Macmillan Rivers. He went by the Dalton trail to Five Fingers Rapids, and then followed the river down to the mouth of the Pelly. From Selkirk he triangulated north to the Stewart River, a distance of about fifty-three miles in a straight line, and struck about three miles east of McQuesten Creek. For a considerable distance he followed the height of land between the Pelly and Stewart Rivers. From McQuesten Creek he extended the triangulation and survey up stream, and reached the forks on the 4th of September. His work was somewhat retarded through smoke from the numerous fires set by prospectors, some of whom seem to have a mania for starting bush fires. If this destruction cannot be stopped the timber will be destroyed within a few years.

Mr. A. Saint Cyr proceeded by the Stikine River and the overland route to Teslin Lake, from where he commenced an exploration of the district drained by the Nassolin and Big Salmon Rivers.

He made a triangulation survey of the Nassolin which he carried across to Quiet Lake, the head waters of Big Salmon River, and extended it as far as the western edge of the mountains. He took numerous photographs of the country which are being used for mapping purposes.

The overland route was used this year for the first time to drive cattle to Teslin Lake; there was an abundance of good feed in close proximity to the trail.

#### INTERNATIONAL BOUNDARIES.

The greater part of the boundary line between Canada and the United States has been marked out by commissioners acting under the provisions of the several boundary



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treaties, of which the most important in this relation are those of 1814, 1818, 1841 and 1846.

The lines so marked comprise the whole line across the continent, from the mouth of the River St. Croix, in Passamaquoddy Bay, to the open waters of the Pacific Ocean at the entrance to the straits of Fuca.

There remain to be determined the Alaska boundary (treaty line of 1825) and the water boundary in Passamaquoddy Bay, from the mouth of the River St. Croix to the open waters of the Atlantic Ocean. The duty of determining and laying out this latter line was delegated by the convention of 1892 to commissioners, who, however, failed to agree. The difficulties involved in a final settlement of the Alaskan boundary were referred to in my last annual report.

Besides these yet undetermined portions of the boundary, there are many places on the line between the Atlantic and Pacific where the monuments set in the original survey have disappeared or have been displaced, and other places where the development of the country adjacent to the line calls for a more thorough marking of the line by intermediate monuments. Instances of the former kind, the disappearance of marks, are numerous along the whole of the land boundary, but more especially, according to the latest reports, along the 49th parallel, east of the Rocky Mountains.

There is no treaty in force between the United States and Great Britain under which re-marking of the boundary can be done; a special convention or agreement is required.

All these boundary matters were among the subjects dealt with by the International Commission at its sittings in Quebec and Washington, but no agreement has yet been reached.

An officer of the Department was sent to Europe last summer to procure the reports, maps, field notes, &c., of the various boundary surveys, in order that the Department might be fully prepared to meet any questions which may arise.

### INTERPROVINCIAL BOUNDARIES.

In my last annual report, I drew attention to the fact that the boundary line between the provinces of Ontario and Manitoba extending from the north-west angle of the Lake of the Woods to the Winnipeg River had been surveyed by a joint commission. The commissioners, Mr. Elishu Stewart on behalf of the Dominion and Mr. Bryce J. Saunders on behalf of Ontario, have since submitted their report. The survey is of such a careful and permanent character, that it would seem improbable that any difficulties may now arise in connection with this boundary.

### TIMBER, MINERAL AND GRAZING LANDS.

The revenue from the above sources for the fiscal year 1897-98 was \$828,431.01. The revenue for the fiscal year 1896-97 was \$88,309.50.

### TIMBER.

The timber dues received amounted to \$119,769.03, being an increase of \$50,274.85 as compared with the previous fiscal year. Of the revenue from timber, \$21,081.26

was for bonuses, ground rents, royalties and dues on timber cut from lands in the railway belt in the Province of British Columbia, being a decrease of \$1,931.26 as compared with the previous year. The total revenue received from timber in Manitoba, the North West Territories and the Yukon Territory up to the 1st of July, 1898, was \$1,569,893.17, and the total revenue from timber within the railway belt in British Columbia up to the same date was \$326,086.19. During the year 39,096,407 feet B.M. of lumber were manufactured from timber cut under license in Manitoba, the North West Territories and in the railway belt in British Columbia.

The Crown Timber Agent, Winnipeg, gives the following information in relation to the quantity of lumber disposed of in Manitoba and points as far west as Regina, in the Territories :—

	1897.	1898.
	Feet.	Feet.
Red and White Pine from the Lake of the Woods, manufactured principally from logs brought from the State of Minnesota.....	45,000,000	53,000,000
Red and White Pine from points lying east of Rat Portage, all cut from Canadian logs.....	10,500,000	13,000,000
United States Pine (manufactured) imported from the State of Minnesota.....	16,871,104	35,751,960
Canadian Spruce manufactured from timber cut in Manitoba.....	14,241,909	15,267,041
British Columbia products.....	6,000,000	9,000,000
Total .....	92,613,013	126,019,001

Approximately, 65,000 cords of wood were merchanted at Winnipeg at prices varying from \$2.50 to \$4.50 per cord.

The following is a comparative statement of the average price of lumber within the several Crown Timber Agencies during the past fourteen years :—

Agency.	1885.	1894.	1895.	1898.
	Per M.	Per M.	Per M.	Per M.
Winnipeg.....	\$13.50 to \$25	\$17	\$17 to \$19	\$12 to \$15.50
Brandon.....	20 to 22	15	15	13 to 15.00
Whitemouth.....	11 to 12	.....	10	10 to 11.00
Calgary.....	25 to 30	8 to 16	8 to 16	8 to 16.00
Fort McLeod.....	30	10	10 to 16	7 to 16.00
Lethbridge.....	.....	9 to 16	.....	.....
Prince Albert.....	30 to 45	10 to 25	8 to 25	15 to 17.50
Edmonton.....	25 to 30	18	13 to 16	10 to 12.00
British Columbia.....	.....	10	7 to 9	7 and 8.00

The number of timber berths granted in the Province of Manitoba and the Territories is 306, and within the railway belt in British Columbia, 166. Fifty-one berths have been granted in the Yukon Territory, covering a total area of 201½ square miles. A list of the timber berths and the owners thereof appears in the report of the chief clerk of the Timber and Mines Branch of this Department.

The regulations governing the granting of yearly licenses and permits to cut timber on Dominion lands in Manitoba, the North West Territories and within twenty miles

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on either side of the Canadian Pacific Railway were amended by an Order in Council dated the 1st of July, 1898. A synopsis of the regulations may be found in the report of the chief clerk of the Timber and Mines Branch.

### TIMBER RESERVATIONS.

Last autumn I visited the timber reserves at Turtle and Moose Mountains to inspect the work performed by the Department in the earlier part of the year to protect the timber from prairie fires. Fire guards have been constructed, and rangers appointed to protect the timber. At Moose Mountain a large quantity of the timber is burnt or dry and it will be the object of the Department to confine the cutting of wood for settlers' use to this class of timber.

Arrangements were made with the Canadian Pacific Railway Company whereby they relinquish all their lands within the reserve at Turtle Mountain, taking other lands in lieu thereof, and a similar exchange made with the Provincial Government of Manitoba for lands in the reserve at the Spruce Woods. It is the intention to endeavour to obtain all the lands within the several reserves which have been alienated, in order that the Government may have full control of the timber within the reserves.

The boundaries of the timber reserves at Riding Mountain in Manitoba and at Cooking Lake near Edmonton have not been finally settled, but it is hoped that during the coming summer permanent boundaries will be established and arrangements made to place all the lands within the reserves under the jurisdiction of the Department.

It has been decided not to issue permits to cut timber for sale on Dominion lands along the eastern slope of the Rocky Mountains and the foothill country adjacent thereto south of the Bow River, and to preserve the timber as far as possible from being destroyed with the view of securing a permanent supply of water for irrigation purposes. The permanency of the water supply is largely dependent upon the preservation of the forests at present covering the watershed, and protection can only be secured by prohibiting the cutting for sale of the timber on Dominion lands and by endeavouring to prevent the spread of forest and prairie fires.

### GRAZING AND STOCK RAISING.

Mr. Pearce, in his report, gives a favourable account of the cattle industry and states that last year was a profitable one to the owners of stock.

The Department during the last fiscal year issued 168 leases for grazing lands. The majority of the lessees are settlers who acquire a few sections of land in the vicinity of their homesteads. The total number of ranches comprising Dominion lands is 448, covering an area of 333,469 acres. There are also in force 87 leases of school lands in the North West Territories, covering a total area of 28,228.09 acres, and 76 leases of school lands in Manitoba including a total area of 15,811 acres. A list of the lessees of grazing lands and the areas of each leasehold may be found in the annual report of the Timber, Mineral and Grazing Lands Branch. The sum of \$6,894.42 was collected during the last fiscal year for rent of grazing lands.

### HAY.

During the year 3,610 permits to cut hay were issued by the agents of Dominion lands and the sum of \$9,013.44 was collected for dues.

## MINERALS OTHER THAN COAL.

During the past fiscal year 247 entries were granted by the agents of Dominion lands in Manitoba and the North West Territories for quartz locations. In the Yukon Territory 9,134 placer claims and 276 quartz locations were recorded up to the 1st of July, 1898, and between that date and the 31st of December, 1898, 4,570 entries for placer claims and 177 entries for quartz locations have been granted.

The revenue collected in the Yukon Territory from this source up to the 1st of July, 1898, was \$188,360.94 and from that date to the 31st December, 1898, was \$110,136.

Twenty-two thousand, six hundred and seventy-eight free miner's certificates have been issued up to the 1st of March, 1899, for which a total revenue of \$226,888 was collected.

The total sum collected for royalty on the gross output of placer claims in the Yukon Territory after deducting from the annual output of each claim the sum of \$2,500, was \$391,353.81.

Leases have been issued to dredge for minerals other than coal in the submerged beds of rivers in the Yukon Territory covering 1,353 miles, and for the same purpose in the North West Territories covering 907 miles.

The total revenue received for one year's rent of the leaseholds in the Yukon Territory was \$133,005.30, and of the leaseholds in the North West Territories, \$8,862.71.

No dredging plant has yet been placed on any of the rivers in the Yukon Territory. Several small dredges have for the past two seasons been working on the North Saskatchewan River above Edmonton, and during the last season an English Company have expended between \$40,000 and \$50,000 in the construction of a dredge which it is hoped will successfully and profitably save the fine placer gold in the Saskatchewan River.

A special report from Mr. W. Pearce upon the operations carried on last season on the North Saskatchewan River, will be found embodied in this report, and the agent of Dominion lands at Edmonton also refers to the same subject in his report.

During the last fiscal year the sum of \$4,063.65 was received for mining locations transferred to the Government of British Columbia under an arrangement between that Government and the Government of Canada in 1890, whereby the Provincial Government, who own the precious metals, were empowered to grant entries for locations containing any minerals with the exception of coal, in accordance with their regulations, purchasing from the Government of Canada the land at the rate of \$5 per acre. The total amount received for mining locations in the railway belt in British Columbia up to the 1st of July, 1898, was \$11,528.85. The total revenue received from sales of mining locations in Manitoba, the North West Territories and in the railway belt in British Columbia up to the 1st of July, 1898, was \$19,891, and the area sold was 3,872 acres.

The regulations for the disposal of quartz mining claims in Manitoba, the North West Territories and in the Yukon Territory, of the 9th of November, 1889, were superseded by the regulations of the 8th of March, 1898. The regulations governing placer mining in the Yukon Territory were amended by Order in Council dated the 18th of January, 1898, and on the same date regulations were passed for the issue of leases to dredge for minerals other than coal in the submerged beds of rivers in the Yukon Territory.

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The regulations of the 21st of July, 1897, governing the issue of leases to dredge for minerals in the beds of rivers in Manitoba and the North West Territories have been amended.

A synopsis of all the mining regulations up to date may be found in the report from the Timber and Mines Branch of this Department.

### PETROLEUM.

The Order in Council of the 6th of August, 1898, authorizes the reservation for an applicant of 640 acres of land situated south of the line of the Canadian Pacific Railway in the District of Alberta, to prospect thereon for petroleum, and if oil is found in paying quantities to sell the land to the applicant at the rate of one dollar per acre, with a provision that a royalty of two and one-half per cent upon the sales of the petroleum be paid to the Crown.

### COAL MINING LANDS.

The revenue from coal lands during the last fiscal year was \$1,833.74. The total area sold up to the 1st of July, 1898, was 16,423.86 acres, and the total amount received therefor was \$158,265.53.

In the Yukon Territory the price of coal lands has been fixed at \$40 per acre if the coal is anthracite, and \$20 per acre for any other class of coal. The sale is made subject to the conditions attached to the sale of other public lands in the said territory, and to any other conditions which may be imposed by the Commissioner of the Yukon Territory.

A number of applications have been made for locations in the vicinity of Dawson, and several locations have been sold. One company have built a tramway from the mine to the river bank, and they intend using the coal on their steamers next season and shipping it for sale at Dawson and other points.

The Crown Timber Agent at Winnipeg reports that about 24,000 tons of American anthracite, 5,500 tons of Canadian anthracite, 1,500 tons of American soft, 8,000 tons Canadian soft from Lethbridge, Alberta, and 21,000 tons of Souris lignite were consumed at points in Manitoba and as far west as Moosejaw, and that coal sold during the years 1897 and 1898 respectively as follows:—

	1897.	1898.
American anthracite, f.o.b. at Winnipeg	\$9.50 per ton.	\$7.50 per ton.
Canadian " " "	9.00 "	6.75 "
American soft " "	6.50 "	6.00 "
Canadian soft, Galt " "	6.00 "	7.00 "
" Souris " "	3.75 "	3.75 "
Souris lignite " Brandon	3.50 "	3.20 "
" " Regina	3.50 "	3.40 "
" " Melita	3.25 "	2.80 "
" " Moosejaw	3.25 "	3.20 "

## IRRIGATION AND IRRIGATION SURVEYS.

The subject of irrigation in the southern and western portions of the North West Territories, and the general surveys necessary to locate and determine the volume of water available for that purpose, have received careful attention by the Department during the past year. In the early part of this year representations were made by the Territorial Government that the introduction of irrigation works would be stimulated by a simplification of the provisions of the Irrigation Act relating to the records of water rights and by the centralization of the office of record and administration of the Act as part of the duties of the Territorial Department of Public Works at Regina. These recommendations were brought into force by amendments to the Irrigation Act passed at the last session of Parliament, and the provisions of the Act are now administered by the Minister of the Interior and by the Commissioner of Public Works for the Territories acting as the agent of this Department. The change has, so far, been found to work satisfactorily and as the territorial officials are in close touch with those interested in irrigation development it is thought that they will be able to deal promptly and intelligently with the many questions connected with the use of water for irrigation.

The general irrigation surveys, which form the basis of information regarding the location and extent of irrigable areas and the water supply available for their reclamation, have been continued during the year, and have added much valuable information to that previously obtained regarding these subjects. The work of these surveys during the past season is dealt with at some length in the report of Mr. A. O. Wheeler, D.L.S., who is in charge of this branch of the work under the general superintendence of Mr. J. S. Dennis, Deputy Commissioner of Public Works, his report being given in the Surveyor General's annual report.

As was pointed out in my last annual report, the subject of irrigation in the Territories has now passed entirely beyond the experimental stage, and it is recognized by those competent to speak on the subject, that the future development of the arid portion of the Territories is dependent upon the early introduction of the larger irrigation works required to reclaim large areas which are now unproductive and of little use, even for stock grazing, owing to scarcity of water.

Mr. J. S. Dennis reports that at the present time the number of constructed ditches, with their length, and the acreage susceptible of irrigation therefrom, are as follows :—

Number of constructed ditches.....	177
Length " " .....	409 miles.
Acreage susceptible of irrigation from constructed ditches	103,464 acres.
Approximate cost of constructed canals and ditches, allowing current wages for time spent by owners in constructing the smaller ditches by their own work..\$	257,000
Estimated increased value of the land which is capable of being irrigated from constructed ditches, based upon a certain fodder and root crop each year.....\$	414,856

The faith of the people of the Territories in the principle of irrigation is clearly indicated by the large amount of private work and capital expended in completing the above mentioned work, and it is gratifying to be able to state that this private enterprise has sufficiently proved the benefits to be derived from

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irrigation to induce the investment of the sums required to complete the larger canals which must be undertaken as corporate works, this result being shown by the commencement of the construction by the Alberta Irrigation Company of the St. Mary's Irrigation Canal, which is designed to divert sufficient water from the St. Mary's River to irrigate a very large area of land in the Lethbridge district. This canal was originally located as part of the work of the general irrigation surveys, and the value of the work of that character which we are performing is proved by the fact that this Company is now actively engaged in the work of constructing the canal, and intends to spend upwards of half a million dollars upon the undertaking. This scheme will have a very marked effect upon the settlement and development of the south-western portion of the Territories as the company has made arrangements to bring in from the United States some large colonies of good settlers, who are acquainted with the methods of farming by the aid of irrigation, and success in this undertaking is likely to be followed in the near future by the formation of other companies who will undertake the construction of some of the other large canals, which our surveys have proved feasible, and which will open up other large and valuable areas to settlement.

In addition to the water rights which have been granted under the Act for the above-mentioned irrigation works, some 109 rights have been granted for the use of water for domestic purposes. The larger number of these rights have been granted to the Territorial Government, who are endeavouring to improve the water supply for domestic and stock-watering purposes in the eastern portion of the Territories, where the present shortage of water is a serious impediment to settlement. The system which they are adopting is to build dams on the smaller streams and ravines, and thus create reservoirs for the storage of the spring freshets, and conserve the water which would otherwise go to waste, until it is needed in the latter part of the summer and during the fall.

The Fourth General Report on Irrigation and the Canadian Irrigation Surveys, which deals exhaustively with the whole subject, is now in course of preparation, and it is hoped to have it ready for printing in monograph form at an early date. These general reports have done much towards increasing and extending the knowledge of irrigation in the Territories and are looked upon as valuable contributions to the current literature regarding this important question.

### TIME SALES.

The large areas of land, chiefly in the district of Winnipeg and Brandon, which had for a number of years been locked up from settlement owing to their being covered by time sales long overdue, have, I am glad to say, been made available for settlement, or otherwise disposed of to better advantage. These lands, for the most part, were acquired in the years 1879, 1880 and 1881 for speculative purposes, and although in most cases only a small instalment was paid on account, the sales were allowed to remain in arrears from year to year, until the interest accrued thereon was as large, if not greater than the balance of principal due. As the purchasers had been repeatedly notified to pay up the arrears, but in the great majority of cases had neglected to do so, it was felt that the holding of the lands affected in this way was detrimental, not only to the municipalities within which they are situated, but more especially to the settlement of the country by actual settlers. It was therefore decided to cancel the sales, and to throw the lands open to settlement.

In view of the favourable location of these lands, situated as they are in close proximity to some of the most important agricultural centres in that part of the Province of Manitoba, it was deemed advisable to dispose of the same, by ordinary entry or sale, to none but actual settlers, who would be prepared to comply with the ordinary conditions attaching to a homestead entry, namely, residence upon and cultivation of the land.

A large proportion of the lands in question was disposed of in the manner above mentioned, and the remainder has been used, part for purposes of exchange with the Canadian Pacific Railway Company in lieu of lands belonging to that company within the Turtle Mountain Timber Reserve, as already referred to, and part for purposes of exchange with the Province of Manitoba in lieu of lands belonging to the Province which had been settled upon by *bona-fide* settlers, in different localities, or had been disposed of by the Department after the passing of the Swamp Lands Act of 1885, although reported upon by the Commissioners appointed under that Act as being swamp lands and as properly belonging to the Province.

### SCHOOL LANDS.

#### MANITOBA.

The circumstances which led to the adoption of the system of issuing permits for the cultivation of school lands were fully explained in the annual report for the fiscal year ending the 30th June, 1897.

This system was continued for the season of 1898 with the most satisfactory results, both as regards the interests of the School Lands' Endowment Fund and that of the settler, for not only has the area of 9,224 acres, consisting of old breaking on school sections in various parts of the Province, been thereby kept under cultivation and been made productive, which would otherwise have become overgrown with noxious weeds to the great injury of the neighbouring farms, but the sum of \$5,429.83 collected for rentals under these permits was paid into the Manitoba School Lands' Endowment Fund during the year ending the 30th June, 1898.

The total amount received on account of permits from the adoption of the system in May, 1897, up to the 30th of June, 1898, is \$5,859.83.

In order to afford an opportunity to all who wished to do so to obtain a cultivation permit, it was decided last autumn that all applications for permits should be held until the 15th January, 1898, before being dealt with, and that should there then be more than one application for a permit for the same land, the applicants should be invited to tender for the permit at an upset rental of fifty cents per acre. A public notice to that effect was accordingly published in the Manitoba papers in November, 1897.

Under this arrangement fifty-two permits were put up for tender, after the 15th January, 1898, among the applicants therefor. The amounts tendered ranged from the minimum rental of fifty cents per acre to \$2.50 per acre, the average of the successful tenders being \$1.21 per acre.

In the case, however, of certain school sections in the Mennonite district, each of which had been cultivated in small patches during past seasons by a number of Mennonites, very few of whom would be able to take out a permit for the entire acreage



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broken on any of the quarter-sections, it was decided that the best way would be to have the School Lands Inspector, Mr. J. W. Greenway, visit these lands and report as to the allotment of the permits among the applicants.

This was done, and the permits issued in accordance with the recommendation made by Mr. Greenway after visiting the land and looking into the claims of the different applicants.

In cases where there was only one applicant, the permit was issued on payment in advance of the usual rental of 50 cents per acre. Four of the permits issued cover next season as well as the one past, the land having only been summer-fallowed in 1898. In all other cases the permits covered the season of 1898 only, and expired on the 1st October of that year.

### SALES.

In view of the increased demand for school lands in Manitoba, it was decided last spring after consultation with the Manitoba Government, to offer a number of quarter-sections at public auction during the year.

The lands which it was proposed to place on the market were those lying within a radius of eight miles of any of the railways in the Province, as well as those outside that radius, for which applications to purchase had been filed in the Department.

The work of inspecting these lands for the purpose of determining the upset prices to be placed on them for the sales was begun in May last and continued into September.

Owing, however, to the unusually wet autumn in Manitoba, the harvesting operations were so retarded that it was feared that a large number of intending purchasers would not be in a position to bid on the lands at the time fixed for the sales, and it was, therefore, decided at the instance of the Government of Manitoba, to postpone the sales until next season.

While no auction sales of school lands were held during the last fiscal year, a small area was sold to the Canadian Pacific Railway Company and to the Northern Pacific and Manitoba Railway Company, under the provisions of the Railway Act, namely, 12.68 acres to the former company at the rate of \$5 per acre, amounting to \$63.40, for the purpose of a substitutional highway to replace the regular road allowance occupied by the railway, and 104.34 acres to the Northern Pacific and Manitoba Railway Company for right-of-way purposes, at the same rate, amounting to \$521.70, or a total of 117.02 acres, amounting to \$585.10.

Three hundred and thirteen applications to purchase Manitoba school lands were received during the year.

The net receipts from Manitoba school lands during the fiscal year were as follows:—

Cultivation permits .....	\$ 5,429 83
Timber, hay and grazing leases.....	2,817 43
Sales.....	41,297 01
	<hr/>
Total .....	\$49,544 27

## NORTH WEST TERRITORIES.

No sales of school lands were held in the Territories during the past fiscal year. The revenue derived from the issue of cultivation permits as well as from the timber dues and hay and grazing lessees will be found in the accompanying statement showing the balance to the credit of the several school lands funds for the year ending the 30th June, 1898.

## MANITOBA School Lands Fund.

	DR.	CR.
	\$ cts.	\$ cts.
Balance, 1st July, 1897 .....		
Sales, 12 months ended 30th June, 1898 .....		448,674 13
Rentals, for cultivation purposes, 12 months ended 30th June, 1898 .....		41,297 01
Timber, hay and grazing, 12 months ended 30th June, 1898 .....		5,429 83
Interest, 12 months ended 30th June, 1898 .....		2,817 43
Cost of management at Ottawa, 12 months ended 30th June, 1898 .....		13,987 07
Expenses, being examinations, valuations, auctioneers' fees, printing, advertising, &c., to 30th June, 1898 .....	825 00	
Interest paid to Manitoba Government to 30th June, 1898 .....	2,049 11	
Balance, 30th June, 1898 .....	13,992 88	
	495,338 48	
	512,205 47	512,205 47

## ASSINIBOIA School Lands Fund.

	DR.	CR.
	\$ cts.	\$ cts.
Balance, 1st July, 1897 .....		
Timber, hay, grazing, 12 months ended 30th June, 1898 .....		5,954 41
Rentals, for cultivation purposes, 12 months ended 30th June, 1898 .....		603 94
Interest, 12 months ended 30th June, 1898 .....		82 50
Cost of management at Ottawa, 12 months ended 30th June, 1898 .....		178 90
Balance, 30th June, 1898 .....	412 50	
	6,407 25	
	6,819 75	6,819 75

## ALBERTA School Lands Fund.

	DR.	CR.
	\$ cts.	\$ cts.
Balance, 1st July, 1897 .....		
Rentals, for cultivation purposes, 12 months ended 30th June, 1898 .....		57,401 65
Timber, hay and grazing, 12 months ended 30th June, 1898 .....		23 00
Interest, 12 months ended 30th June, 1898 .....		666 76
Cost of management at Ottawa, 12 months ended 30th June, 1898 .....		1,734 48
Balance, 30th June, 1898 .....	412 50	
	59,413 39	
	59,825 89	59,825 89

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## SASKATCHEWAN School Lands Fund.

	DR.	CR.
	\$ cts.	\$ cts.
Balance, 1st July, 1897 .....		914 44
Timber, hay, &c., 12 months ended 30th June, 1898 .....		52 00
Interest, 12 months ended 30th June, 1898 .....		28 13
Balance, 30th June, 1898 .....	994 57	
	994 57	994 57

MILEAGE of Railways returned to the Department of Railways and Canals, as completed in Manitoba, the North West Territories and British Columbia, up to 30th June, 1898.

### MANITOBA AND NORTH WEST TERRITORIES.

	Up to 30th June, 1897.	Up to 30th June, 1898.	During Year ended 30th June, 1898.
<b>CANADIAN PACIFIC RAILWAY.</b>			
<i>Main Line—</i>			
From eastern boundary of Manitoba, 1½ miles west of Ingolf, to Hector, eastern boundary of British Columbia .....	1,065 50	1,065 50	
<i>Branch Lines of Canadian Pacific—</i>			
Emerson.—Winnipeg Junction to Emerson .....	64 80	64 80	
Selkirk.—Winnipeg to West Selkirk .....	22 50	22 50	
Stonewall.—Air Line Junction to Stonewall .....	18 20	18 20	
Gretna.—Rosenfeldt to Gretna .....	14 00	14 00	
Pembina Mountain.—Winnipeg Junction to Manitou .....	101 10	101 10	
Souris branch and extension .....	411 50	412 10	0 60
Alberta Railway.—Dunmore to Lethbridge .....	109 50	107 00	*2 50
<i>Leased Lines by Canadian Pacific—</i>			
Manitoba South-Western Colonization .....	215 20	215 20	
<b>OTHER RAILWAYS.</b>			
Alberta Railway.—Lethbridge to Coutts, on international boundary .....	64 62	64 62	
Calgary and Edmonton .....	295 07	295 07	
Great North-West Central .....	50 93	50 93	
Lake Manitoba Railway and Canal Co. ....	100 74	123 24	22 50
Manitoba and North-Western .....	234 50	234 50	
Northern Pacific and Manitoba .....	265 12	265 12	
Qu'Appelle, Long Lake and Saskatchewan .....	253 96	253 96	
Saskatchewan and Western .....	15 47	15 47	
Winnipeg Great Northern .....	40 00	40 00	
<b>Total</b> .....	<b>3,342 71</b>	<b>3,363 31</b>	<b>20 60</b>

\* The junction with main line of Canadian Pacific Railway was moved further west, thus shortening this branch line.

## MILEAGE of Railways completed in British Columbia.

	Up to 30th June, 1897.	Up to 30th June, 1898.	During Year ended 30th June, 1898.
<b>CANADIAN PACIFIC RAILWAY.</b>			
<i>Main Line—</i>			
Hector to Vancouver.....	515·90	515·90	
<i>Branch Lines—</i>			
New Westminster.....	8·20	8·20	
Vancouver to Coal Harbour.....	1·20	1·20	
Mission Junction to Mission.....	10·10	10·10	
Tree Forks to Sandon.....	4·20	4·20	
Revelstoke to Arrow Lake.....	27·80	27·80	
<i>Leased Lines by Canadian Pacific—</i>			
Columbia and Kootenay.....	28·50	60·50	32·00
Nakusp and Slocan.....	36·90	36·90	
Shuswap and Okanagan.....	51·00	51·00	
<b>OTHER RAILWAYS.</b>			
Esquimalt and Nanaimo.....	78·00	78·00	
Kaslo and Slocan.....	31·80	31·80	
Nelson and Fort Sheppard.....	59·40	59·40	
Victoria and Sydney.....	16·26	16·26	
Red Mountain.....	9·53	9·53	
Total in British Columbia.....	878·79	910·79	32·00

NOTE.—The Crow's Nest Pass branch of the Canadian Pacific Railway was nearly completed at the 30th June, 1898, from Lethbridge to east side of Kootenay River, a distance of 288·75 miles—106 miles being in the North West Territories and 182·75 miles in British Columbia. This is not included in the above lists of completed railways.

STATEMENT showing Receipts on account of Dominion Lands from 1st July, 1872, to 30th June, 1898.

Fiscal Year.	Homestead Fees.	Pre-emption Fees.	Improvements.	SALES.		Map sales, Office and Registration Fees, &c.	Surveyors' Examination Fees.	Miscellaneous, including Trust.	Inspection, Canalization and Sundry Fees.	Timber Dues.	GRAZING LANDS.		HAY PERMITS, MINING FEES, STONE QUARRIES, &c.		Rocky Mountains Park of Canada.	COLONIZATION LANDS.		Gross Revenue.	Refunds.	Net Revenue.
				Cash.	Scrip.						Cash.	Scrip, etc.	Cash.	Scrip.		Cash.	Scrip.			
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
1872-73	6,960 00			19,170 20						109 25								26,239 45		26,239 45
1873-74	7,310 00			19,834 75				125 50		2,710 55								29,980 80		29,980 80
1874-75	11,510 00			13,666 90		129 00				2,335 25								27,641 15		27,641 15
1875-76	4,680 00			3,478 94	320 00					387 00								8,865 94		8,865 94
1876-77	2,250 00			1,085 86	136,955 16	4 00		100 00	40 00	320 00								140,755 02		140,755 02
1877-78	14,540 00			2,794 86	120,159 54		180 00		290 00	1,620 00								139,584 40		139,584 40
1878-79	17,690 00			4,998 39	210,904 84	81 00	310 00	13 70	410 00	325 00								234,732 93		234,732 93
1879-80	41,255 00	10,241 43		45,708 97	81,685 86	245 40	580 00	183 25	1,780 00	25,121 46								206,801 37	4,636 08	202,165 29
1880-81	20,450 00	10,801 75	269 00	71,170 17	70,828 30	985 40	420 00	37 58		32,028 34								206,990 54	5,038 22	201,952 32
1881-82	54,155 00	39,843 90	1,758 00	1,240,328 27	50,590 84	3,036 45	890 00	58 10		58,753 14	2,245 00		40 00			354,036 17		1,805,734 87	10,687 55	1,795,047 32
1882-83	73,015 00	54,725 00	7,114 91	516,092 21	33,638 40	3,109 50	890 00	501 77		90,066 46	22,844 43		913 91			248,492 01		1,051,403 60	8,746 05	1,042,657 55
1883-84	41,580 00	28,810 90		424,863 36	40,919 67	1,289 55	530 00	45,766 53	1,713 45	147,983 10	11,370 60		640 90			253,713 40		1,001,776 67	9,220 50	992,556 17
1884-85	25,645 00	17,100 00		2,328 75	199,275 32	1,621 82	370 00	50,068 57	2,685 00	87,474 99	17,089 75		815 63			1,214 22		451,564 65	12,070 85	439,493 80
1885-86	26,110 00	14,371 00		76,140 41	214,657 97	1,339 34	360 00	20,070 00	5,025 00	64,820 31	29,562 51	3,131 08	1,284 83					457,973 95	63,389 12	394,584 83
1886-87	19,614 00	6,887 93	1,971 55	48,175 76	337,640 19	1,171 39	240 00	44,561 00	7,778 40	65,111 74	14,242 77	39,487 67	1,570 40	80 00				588,532 80	19,543 16	568,989 64
1887-88	23,691 00	4,830 00	1,918 35	52,238 36	313,522 67	1,660 75	240 00	20,591 41	12,078 53	94,964 55	5,922 47	23,023 28	2,273 73		2,951 58		10,000 00	569,986 68	6,277 66	563,709 02
1888-89	39,460 00	10,550 00	4,128 48	57,513 16	318,238 57	1,410 16	220 00	10,389 57	20,402 50	90,290 00	2,207 69	16,802 63	3,946 55			16,000 00		594,088 04	5,226 23	588,861 81
1889-90	35,920 00	8,580 00		3,250 54	54,896 85	2,299 07	190 00	3,316 23	20,232 50	84,642 95	1,305 57	9,021 63	9,242 08		1,094 37			462,536 26	8,209 74	454,326 52
1890-91	29,164 10		6,302 61	91,664 98	171,425 14	1,854 78	88 00	7,951 05	14,712 50	102,902 71	3,079 55	16,193 77	8,628 44	160 00				460,990 76	7,195 27	453,795 49
1891-92	46,994 00		6,472 31	108,901 01	97,822 41	2,147 31	135 00	29,898 49	23,104 50	106,461 35	3,726 80	17,222 60	5,616 85					452,151 08	15,291 39	436,859 69
1892-93	37,689 74		7,113 50	93,671 67	77,231 18	975 20	82 00	18,509 35	22,014 00	105,865 24	6,380 80	11,542 39	6,266 13		4,983 23			392,324 43	18,314 97	374,009 46
1893-94	36,462 26		3,497 76	53,254 71	27,840 96	973 11	40 00	13,457 09	11,097 00	81,290 51	5,740 79	7,687 86	6,243 15		2,523 92			250,069 12	4,544 01	245,525 11
1894-95	29,664 88		3,567 90	37,293 71	23,269 62	695 99		6,271 77	6,566 90	74,079 20	5,353 72	8,628 00	5,229 54		2,321 87			202,983 10	4,365 99	198,617 11
1895-96	18,278 00		3,163 15	46,373 98	46,929 65	610 78	50 00	21,679 31	6,810 50	61,923 47	7,071 86	6,255 90	5,813 51		2,734 82			227,694 93	8,368 79	219,326 14
1896-97	21,179 00		3,737 01	49,335 53	16,929 38	795 05	70 00	19,421 98	8,527 50	68,992 82	4,715 01	2,500 00	8,518 18		2,132 11			206,863 57	15,010 54	191,843 03
1897-98	34,780 00		5,649 63	80,178 64	28,918 14	1,987 40	10 00	21,242 66	10,042 00	119,313 78	4,758 08	510 39	699,305 26		3,045 65			1,009,741 63	4,678 55	1,005,063 08
	720,046 98	206,741 01	65,941 06	3,412,106 97	2,695,048 56	28,222 45	5,895 00	334,214 91	175,310 28	1,569,893 17	147,617 40	162,007 20	766,349 09	320 00	30,362 08	857,461 08	30,460 50	11,207,997 74	230,814 67	10,977,183 07



## Department of the Interior.

### DISTRICT OF KEEWATIN.

The report of His Honour the Lieutenant Governor of Keewatin forms part III of this volume. It is satisfactory to note that the general food supply of the fur-hunters and nomadic tribes scattered throughout this large district, which consists chiefly in deer, game and fish, has been quite ample to meet the requirements of these people, and that on the whole the year has been a prosperous one.

It is a fact worthy of comment that there has not been a single case of crime reported throughout the year. This speaks very highly for the morality of the people who inhabit the district, and it should be stated to their credit that although deprived of the many social advantages which their mode of life necessarily precludes, they have, by their conduct as peaceful and law-abiding subjects, set an example which might well be followed to advantage in districts more favourably situated.

### ROCKY MOUNTAINS PARK OF CANADA.

The report of the Superintendent of the Park will no doubt be read with much interest. The steady increase in the number of persons, from all parts of the world, who visit the springs each year, as evidenced by the official returns of attendance, must be accepted, I think, as a pretty sure indication that the National Park is growing in popular favour as a summer resort for both the invalid and the tourist.

It is also satisfactory to learn that the buffalo preserve which has been recently established within the limits of the Park, is likely to prove a success, and that this new attraction is a source of much interest to the visitors.

The suggestion of the Superintendent as to the advisability of extending the present boundaries of the Park is one well worthy of consideration, and I may add that this matter is now engaging the attention of the Department.

### CLAIMS OF SQUATTERS WITHIN THE ESQUIMALT AND NANAIMO RAILWAY BELT, IN VANCOUVER ISLAND, BRITISH COLUMBIA.

Part VII covers the report of Mr. T. G. Rothwell, Law Clerk of the Department, upon the claims of squatters within the tract of land in the Island of Vancouver which was conveyed to the Esquimalt and Nanaimo Railway Company by Letters-Patent issued by the Dominion Government on the 21st of April, 1887.

It will not be out of place to state briefly here the nature of the claims in question, and the reasons which resulted in the issue of a commission, under the provisions of Chapter 114 of the Revised Statutes of Canada, appointing Mr. Rothwell a commissioner to enquire into and report upon the matter.

Prior to the passing of Chapter 14 of 46 Victoria and Chapter 14 of 47 Victoria, by the Legislature of British Columbia, in the years 1863 and 1884, respectively, and of Chapter 6 of the Dominion Statutes of 1884, a number of settlers had gone into possession and occupation of certain parcels of land within the belt or tract, in Vancouver Island, which was reserved by the three Acts above mentioned, to aid in the construction of the railway between Esquimalt and Nanaimo.

The settlers referred to claimed, before these Acts were passed, that they were entitled to patents for their holdings, which would vest in them the same title to such lands as other settlers had obtained from the Province for lands which had been pre-empted by them, under the ordinary homestead or preemption laws in force at the time of location.

Under the provisions of the three Acts before mentioned, however, the settlers or squatters within the tract thereby reserved were granted patents for the surface rights only of the lands they had taken up.

These settlers prior to the passing of these Acts, and afterwards, had protested against the injustice that they considered had been done to them by compelling them to accept patents for the surface rights only of their lands, and shortly after the present Government assumed office it was decided that the matter was one which demanded the appointment of a commissioner having power to hear evidence, upon oath, concerning any of the claims, or any question in any way relating to any of them.

To save the expense that would have resulted from the appointment of a person not in the employ of the Dominion Government, who would have been competent to hold such an investigation, it was decided to entrust the duty to Mr. Rothwell. The investigation was completed before the date of the publication of the last Departmental report, and Mr. Rothwell's report, the evidence taken by him and all the papers therein referred to were also submitted before that date, but as the action to be taken upon such report had not been decided, no reference was made to it in the Departmental report for 1897.

During last Session copies of Mr. Rothwell's report, with the accompanying evidence and other papers, were laid before Parliament, and since that date similar copies have been transmitted, through the usual channel, to the Provincial Government of British Columbia.

I have the honour to be, Sir,

Your obedient servant,

JAS. A. SMART,  
*Deputy of the Minister of the Interior.*





GROUP OF DOUKHOBORS ON THEIR ARRIVAL AT HALIFAX.

Department of the Interior.

PART I

DOMINION LANDS



# Department of the Interior.

## No. 1.

DEPARTMENT OF THE INTERIOR,

OTTAWA, 31st December, 1898.

The Honourable CLIFFORD SIFTON,  
Minister of the Interior, Ottawa,

SIR,—I have the honour to submit for your information the following report in connection with the branch of your Department under my control. I also beg to hand you the report of Mr. Wm. Pearce, Superintendent of Mines, and those of the several local Land Agents.

The office of Commissioner of Dominion Lands having been left vacant by the death of Mr. A. M. Burgess, in February, 1898, I was appointed to the position by Order in Council dated the 8th July, and immediately took charge. During the interim the office was under the control of Mr. T. R. Burpe, who shortly after the death of Mr. Burgess was appointed by Council Acting Commissioner.

Owing to the interruption caused by the removal of this office from Winnipeg to Ottawa, and in getting the records in workable order, it has been found impossible to obtain an accurate estimate of the work performed during the months of July, August and September, 1897, but a statement is given of the principal items of work done during the nine months ended on the 30th June last.

### OFFICE WORK.

Letters sent.....	15,941
Applications for patent dealt with.....	2,160
Cancellations ordered.....	622
“ refused.....	144
	<hr/>
	766

### DESTRUCTION OF THE NEW WESTMINSTER, B.C., OFFICE.

The disastrous fire which occurred last September at New Westminster, B.C., completely destroyed the office of the Local Agent at that place, and although many valuable papers and records were lost, I am glad to say that it will be possible to replace many of them and that very little, if any, inconvenience to the public will result therefrom.

### SUB-AGENTS.

With a view to enabling old and new settlers to avoid the loss of time and expense often necessitated by a visit to the office of the Local Agent, a number of Sub-Agents have been appointed throughout the country who are authorized to receive applications for homestead entry, applications for patent, and to transact other business. The arrangement has been found to work admirably, and has proved a great boon to many persons.

### CANCELLED TIME SALES, ETC.

Attention has been called to the fact that a large number of sections and parts of sections throughout the country which long ago were disposed of under what is known as “time sales” have practically been locked up for years, although the conditions of

the sales have not been carried out ; it was decided, therefore, to take such proceedings as were necessary to make these lands available. Similar action is also being taken with lands granted under homestead and pre-emption entries in connection with which the required duties have long been in default. By this means a large area of suitable land in desirable localities has been and will be thrown open. It is the intention to hold these lands exclusively for settlement, but in order that persons who may have already earned homesteads and are not entitled to second entries but who require additional land, may have an opportunity of acquiring them, sales will be made at the minimum price of \$1 per acre, subject to the performance of the ordinary homestead conditions. With this exception these lands will be held exclusively for homestead entry.

#### SURVEYS.

The large number of settlers going in to the Dauphin District has rendered it necessary that the surveys in this part of the country should be proceeded with as rapidly as possible. The local agent for this district points out that great difficulty has been experienced during the past year in finding suitable locations in the surveyed territory for persons seeking homesteads and that many left the district in consequence.

#### PERMANENT TIMBER RESERVES.

It is felt to be of the utmost importance that some steps should be taken to preserve the timbered lands especially in the Province of Manitoba, and arrangements are about perfected for making certain permanent reservations with this object in view. The intention is to have so far as possible all lands within the limits of those reserves placed under the control of the Department, and consequently the Provincial Government and the Canadian Pacific Railway Company have agreed to exchange their lands so situated for others outside the reservations.

#### SEED GRAIN.

A large sum of money is still due in connection with the advances of seed grain made some years ago, and while a number of those who benefited thereby have discharged their liability or are doing what they can in this direction, it is considered that a great many others who are in a position to do so are neglecting the matter. The indebtedness is of a kind that all concerned should feel not only anxious but willing to discharge at the earliest possible moment.

Notices requiring repayment are now being sent to all who are still in arrears.

#### REPORTS OF THE LOCAL AGENTS.

The reports by the several local agents, which will be found appended hereto, go to show that, generally speaking, there has been a gratifying increase in the number of homestead entries granted, and that the results of the season's farming operations have been most encouraging. In a country of such vast dimensions it is inevitable that failure and disappointment must here and there be met with, but such experiences are almost wholly lost sight of in the general prosperity. While the reports from all parts of the country are satisfactory, possibly the greater number of new settlers during the past year have gone into the Dauphin and Edmonton districts, and the statements made by the agents for these districts will be found of special interest. I would also direct attention to the report of Mr. Pearce, Calgary, which gives much valuable information regarding the work of irrigation and the extensive stock industry of the more western portion of the Territories.

# Department of the Interior.

## MANITOBA CROP REPORT.

The following statistics taken from the Bulletin published by the Provincial Department of Agriculture, Manitoba, make a very satisfactory showing as to the results of last season's harvest in that province :—

	Area in Crop.	Yield per Acre.	Total Yield.
	acres.	bush.	acres.
Wheat .....	1,488,232	17·01	25,313,745
Oats .....	514,824	33·6	17,308,252
Barley .....	158,058	27·06	4,277,927

The yield of wheat would have considerably exceeded the above figures but for the exceptionally unfavourable weather which continued for a month, and in some parts of the province for six weeks during the time for stacking and threshing. The estimated damage to the wheat on account of wet weather is from 1 per cent to 33 per cent of the crop.

### CATTLE.

No. of beef cattle exported ..... 12,525

### HOGS.

No. shipped to British Columbia ..... 5,100  
 No. received by Winnipeg butchers and packers ..... 18,000  
23,100

### STOCK.

No. of horses in the province ..... 101,836  
 “ cattle “ “ ..... 227,097  
 “ sheep “ “ ..... 32,053  
 “ swine “ “ ..... 69,648

### DAIRY PRODUCE.

	Pounds.	Price.	Value.
<i>Butter.</i>		cts.	\$ cts.
Creamery .....	965,024	18·6	179,494 46
Dairy .....	1,151,620	13·94	160,593 50
	2,116,644		340,087 98
<i>Cheese.</i>			
Factory .....	800,084	8·67	69,367 28

It is estimated that a total of 1,011,455 acres are ready for crop next season, 1899

There has probably been no time in the history of our great North West country when the settlers generally have been in so prosperous and comfortable circumstances as at present, and the outlook for the coming year is indeed bright.

I have the honour to be, Sir,

Your obedient servant,

J. G. TURRIFF,

*Commissioner.*

## DOMINION LANDS OFFICE,

WINNIPEG, 29th November, 1898.

J. G. TURRIFF, Esq.,  
Commissioner of Dominion Lands,  
Ottawa.

SIR,—In accordance with your instructions I beg to submit the following report regarding the work done by the Land Branch of the Winnipeg Office during the past year.

While it has not been the practice in the past to give a resume of the year's work in connection with the Land Branch, I thought you might find the following of sufficient interest to make it a part of this report.

A very marked and gratifying increase has taken place in the number of homestead entries during the present year, being for year ending 31st December, 1897, 248 homesteads, and for year ending 31st December, 1898, 573 homesteads.

The policy recently adopted of cancelling unpaid time sales of land, many of which were of very long standing, and of throwing them open for settlement has been much appreciated by the residents of this district.

In many cases these lands were held by speculators who were making no improvements on them and frequently not even paying the municipal taxes, thus increasing the burden of the resident settlers.

During the calendar year, 1898, 187 sales of this class of land, covering 41,493.03 acres have been cancelled in this district and granted to settlers on homestead conditions and a large area of land hitherto lying unproductive, will now be brought under cultivation.

The exclusive reservations in the colonies both east and west of the Red River, which were granted to the Mennonites, were terminated this year, and all even-numbered sections are now available for settlers of any nationality, as well as the vacant odd-numbered sections in township 1, range 6, west, and in all the Eastern Reserve.

Hitherto there has been very little settlement in township 1, range 6, west, the land being rough and scrubby, but now every vacant quarter section has been applied for and a colony of about 35 Icelandic families will move in from North Dakota to settle there next spring.

In what was formerly the Eastern Mennonite Reserve a large number of applications are being made for entry for the odd-numbered sections which were formerly held for sale subject to homestead conditions.

The exclusive reserve for Icelanders on the west shore of Lake Winnipeg has also been thrown open for settlement by any nationality, and the extension of the Stonewall Branch of the Canadian Pacific Railway northwards with the prospect of its continuance next year to the shores of the lake near Gimli, will attract settlement in this direction.

The remarkable demand for land which now exists, has caused an increase in our correspondence from 17,801 letters received and sent in the year ending 31st December, 1897, to 27,544 in the year ending the same date, 1898, being an increase of more than 50 per cent, and much of the time of my staff is engaged in giving information and preparing lists of vacant lands for intending settlers.

It is therefore with pleasure that I learn that a township in the vicinity of White-mouth, has recently been surveyed with the intention of making it available for entry, and also that a surveyor has been instructed to visit the vicinity of township 1, range 12, east, and ascertain whether there is sufficient good land in this district to warrant the Department incurring the expense of a survey.

This neighbourhood, hitherto so remote from settlement, will now be made accessible by the construction of the South Eastern Railway, and from information I have received from men engaged in lumbering on the Roseau River, it seems likely that

## Department of the Interior.

a considerable area of fairly good land can be found near Pine River. The adjacent American territory, although reported to be of quality inferior to the Canadian, is thickly settled, and if intending settlers can be assured that the land will ere long be surveyed, and open for settlement, it is reasonable to expect that it will attract a considerable number of American immigrants.

The past year has been remarkable for the impetus which has been given to the settlement of the vacant lands in the neighbourhood of this city, which, as is generally known, were granted to Half-breed residents of Manitoba, at the date of its transfer to Canada, and are therefore all in private ownership. It is computed by a prominent dealer in farm lands that in the eighteen months ending 31st December, 1898, the lands sold to actual settlers within 40 miles of this city, exceed threefold all those sold for the same purpose during the previous fifteen years.

### HAY PERMITS.

The business done in the issue of hay permits this year has been considerable and the crop has been a bountiful one, but owing to the excessive rainfall, many of the hay meadows were flooded and it became impossible to cut or market the supply. This condition of things has, however, had the compensation of freeing the settlers from risk of prairie fire which has often proved so disastrous to the property, and sometimes even lives of our farmers.

Remarkable buoyancy exists in all branches of business; the Loan Companies report interest well paid and a very brisk demand for money consequent upon farmers increasing their holdings of land and improving their buildings. According to the most recent Provincial Bulletin, the expenditure on farm buildings in this province, is estimated for the past year at no less a sum than \$1,468,740.

I have the honour to be, Sir,

Your obedient servant,

E. F. STEPHENSON,  
*Crown Timber Agent.*

DOMINION LANDS OFFICE,

MINNEDOSA, 1st December, 1898.

The Commissioner of Dominion Lands,  
Winnipeg.

SIR,—I enclose statement showing the work of this office during the twelve months ending the 30th June last, from which it is gratifying to learn that the number of homestead entries granted during the year is largely in excess of the number granted in the previous year.

It will be noticed too that there is a considerable increase in the correspondence of the office which is largely owing to the numerous enquiries as to lands available for homestead entry, and in this connection I may say that lands which in the early settlement of the district were not thought to be desirable, are now eagerly sought after.

Owing to the abundant rainfall, this season's crops were very good, the yield of grain, etc., being larger than it has been for years, and although the farmers in some localities had difficulty in saving their crops owing to the excessive moisture—some resulting from this—still the result of the season's operations is most satisfactory.

I have the honour to be, Sir,

Your obedient servant,

JOHN FLESHER,\*  
*Agent of Dominion Lands.*



STATEMENT of work performed at Minnedosa Land Agency during the year ending on the 30th June, 1898 :—

Number of homestead entries granted .....	227·
Sales made .....	11
Entries cancelled—	
Homesteads .....	98
Pre-emptions .....	26
Mining claims recorded. ....	
Mining certificates issued .....	
Hay permits issued .....	181
Timber permits issued .....	243
Applications for homestead patent recommended .....	147
Letters—	
received .....	2,549
sent .....	2,321

DOMINION LANDS OFFICE,

DAUPHIN, 23rd November, 1898.

The Secretary, Department of Interior,  
Ottawa.

SIR,—In reply to your letter of the 14th inst. I beg to submit herewith a report on the work of this office for the twelve months ending 30th June last, as well as an account of the district at large, this latter being to present date, as suggested by you.

My last report covered particulars, except as to work, up to 11th November, 1897, and I am pleased to be in a position to report that from then until now the prosperity of Dauphin has been marked, new settlers continuing to arrive in large numbers, who, in addition to taking homesteads, have in a great number of instances bought railway lands, others preferring to locate on improved farms, which some of the pioneer settlers are willing to sell at the somewhat high prices that are to be obtained for such as are favourably located. Of those who have so sold, a number have gone back to the Swan River, and other new districts, and where not in a position to take new homesteads, have bought.

I would again point out the necessity of having the surveys pushed forward, as I have in the past year found great difficulty in locating people, who not being in a position to squat, and not being able to find suitable locations in the surveyed lands, left the district. This was more noticeable in those from the States, whose locations were to have been made by delegates, and who wished to settle together, one party comprising 25 families, who were desirous to take up that number of Homesteads, and purchase a like number of odd-numbered quarter sections.

The past season in the main was a favourable one for our farmers, though wet weather in the fall delayed harvesting operations, and damaged considerable grain; but this being far from general, the loss has been light. It is estimated that the district will sell 200,000 bushels of wheat, averaging 33 to the acre and grading on an average No. 2 hard; oats said to have yielded 40 per acre for which 25 cents is being paid; the yield is thought to have been some 75,000 bushels. Barley is but little grown, but what was is good. Roots have been good, and the cattle trade has increased. I regret not having the figures of shipments.

The dairy and poultry industries are not given that attention that could be wished for, but as the country fills up no doubt people will look after this.

Hogs are very scarce, but, I learn, will be grown to a considerable extent next year.

## Department of the Interior.

We have been fairly free from fires, due to the wet season in a great measure, and I would urge on the Department the need for some energetic measure to prevent the destruction of our forests from this cause.

Our people are all in comfortable circumstances and I look for prosperous times in the near future for this district; towns and villages are springing up all along the line of railway, and trade is good.

Of the Galicians who reached us last and this year, the greater number have located and seem to be doing well. I do not expect any relief will have to be asked for them this winter, unless in the cases of some very recent arrivals, who got in nothing to keep them over the winter. A great number have found work on the railway, where, I am told by the contractors, they are of great use; others worked at the harvest through this and other districts.

Building in the towns has been carried on to a great extent, this town having now four elevators, of from 25,000 to 30,000 bushel capacity; of these, three were built this season. A grist-mill of 100 barrels per diem, has also been put in operation; these with some four flat grain warehouses secure to the farmers a good market.

A municipality has been formed, and the town incorporated, new school districts are being formed from time to time, and churches built all through the district.

The figures in the subjoined statement will, I trust, show that Dauphin has attracted its share of attention during the past year.

I am, Sir,

Your obedient servant,

F. K. HERCHMER,  
*Agent of Dominion Lands.*

### STATEMENT of work performed in Dauphin Agency during the year ending 30th June, 1898:

Number of homesteads granted . . . . .	568
“ sales . . . . .	7
“ applications for patent taken . . . . .	192
“ “ “ recommended . . . . .	168
“ hay permits issued . . . . .	247
“ timber permits issued . . . . .	186
“ mining locations recorded . . . . .	5
“ entries cancelled . . . . .	197
“ letters received . . . . .	4782
“ “ sent . . . . .	3494
“ returns to head office . . . . .	220

DOMINION LANDS OFFICE,  
BRANDON, MAN., 19th November, 1898.

The Secretary, Department of the Interior,  
Ottawa.

SIR,—Referring to your letter of the 14th instant, file No. 448472, I have the honour to enclose a statement of work performed in this office during the year ended the 30th June, 1898, from which it will be seen that the work of the first six months is nearly equal to the work of the entire year 1897. The number of entries has nearly

doubled. The filling up of the lands has caused enquiry into the cases of those homesteaders who had entered some years ago, but failed to carry out the duties necessary to entitle them to patent, with the result that a large number of these lands have been cancelled and re-entered by other parties, who have become residents in the different districts. This has greatly improved the position of the other settlers, enabling them to provide better schools and make more municipal improvements on account of the large extra area now available for taxation. It will also reduce the taxes paid by the old residents, who have hitherto had to support the schools, as the absentees have paid very little, if anything, on this account, in addition to which it has caused an ever increasing demand for the lands in the old settled districts, till at the present time it is difficult to obtain an entry in any of the old settlements. The sale of land has also increased, the successful seasons of the past two years having put the farmers in a better position to purchase than they have ever been in before. The changes in the Dominion Lands Act have been a great help to all those first homesteaders who found it very inconvenient to remove their families and put up new buildings on their second homesteads, being forced in consequence to partly abandon their old homesteads and improvements. The residence of sons with their parents has also been a great boon.

The filling up of the land has caused some competition for hay permits, and the issue of permits this season has more than doubled.

The farmers generally are in a good position, and the contented feeling amongst the settlers cannot fail to have a very beneficial effect on future immigration.

I am, Sir,

Your obedient servant,

WM. C. DE BALINHARD.  
*Acting Agent of Dominion Lands.*

STATEMENT of work performed at Brandon Agency during the year ending on the 30th June, 1898 :—

Number of homestead entries granted . . . . .	300
Sales made . . . . .	38
Entries cancelled—	
Homesteads . . . . .	142
Pre-emptions . . . . .	66
Mining claims recorded . . . . .	1
Mining certificates issued . . . . .	...
Hay permits issued . . . . .	501
Timber permits issued . . . . .	1059
Applications for homestead patent recommended . . . . .	385
Letters received . . . . .	9442
" sent . . . . .	9248

## Department of the Interior.

DOMINION LANDS OFFICE,

ALAMEDA, ASSA., 31st December, 1898.

To the Commissioner of Dominion Lands,  
Ottawa, Ontario.

SIR,—I have the honour to submit below a statement of the work performed at this agency for the twelve months ending the 30th of June last.

A large increase is to be noticed over the preceding year in the number of entries granted, hay permits issued and correspondence received and sent. During the above period one hundred and seventy-seven entries were granted as compared with eighty-one for the previous year, and the revenue amounted to six thousand seven hundred and ninety-five dollars and forty-nine cents (\$6,795.49), as against three thousand and ninety-eight dollars and sixty-three cents (\$3,098.63). There have also been granted during the past six months ending the 31st inst., two hundred and eighty-eight homestead entries with revenue in proportion, which goes to show a large progressive increase.

During the early part of the year, I was away on immigration work for two months and a half in South Dakota and Michigan, Mr. A. Norquay, formerly of the Dauphin office staff, taking charge of the office during my absence. I have to report as a result of my trip that a number of first-class settlers came from these States and settled here this spring.

Owing to the increase in the work of the office and the outside attention that had necessarily to be shown to immigrants, it is essential that at least two officials should be permanently stationed here to properly carry on the work. Even with two, a large amount of overtime has to be put in to keep the work in hand.

A feature of the work was the cancelling of the entries of all parties who it was found were not living on their homesteads, or making any attempt to perform their duties. Efforts were made to ascertain from the secretaries of the different School Districts what lands in their respective districts were liable to cancellation, and parties in different parts of the district were also asked for similar information. As a result of these enquiries a considerable number of cancellations have been effected, a clearance made of these unsatisfactory entries, and the lands placed in a position to be entered by anyone desirous of doing so without being put to the delay and uncertainty that must necessarily ensue in the usual process of cancellation.

The extension of the Pipestone Branch of the C.P.R. through the Moose Mountain district is eagerly looked forward to by the settlers there. A large number of entries has been made along the course it is proposed to run in the expectation of the road being completed next year; the resident settlers in most cases have purchased C.P.R. land in addition to their own holdings, and broken up a large additional acreage for crop next year in the same expectation, and it is to be hoped they will not be disappointed.

A new district that has opened up this Fall with a rush, is that around Weyburn, which is situated on the Soo Line, about midway between the International boundary and the main line of the C.P.R. The movement began about September, and since then, one hundred and seventeen homestead entries have been granted there. I am informed that a large amount of C.P.R. land has also been disposed of at the same place. There is said to be excellent agricultural, grazing and hay land in that neighbourhood, and from the number of enquiries received about that portion of the country, it is very probable there will be a large immigration there next year.

I have pleasure in reporting that the French settlement around Alma, at the south-west corner of Moose Mountain is progressing very favourably. The settlers are accumulating around them all the necessaries of a farm, in many cases building new houses and stables, and, notwithstanding their distance from the railway, which is their principal drawback, evince every confidence in the future of their district.

A German settlement has also been started in Township 5, Range 3, W. 2nd M. by a number of families who came out from Michigan last spring. These people have all done well this season, and are forerunners of a large number of their friends from the same place who they expect will come next year.

The district as a whole has been prosperous, the high price paid for grain last year enabled a great many farmers to clear off their store and machinery debts, and while prices could have been better this Fall, still the people are contented and hopeful for the future. I might say that the revenue to the district from grain, of which there has been, or will be marketed this year, approximately speaking, three hundred and fifty thousand (350,000) bushels, will be about one hundred and eighty nine thousand dollars (\$189,000), and from stock, of which two thousand five hundred (2,500) have been exported, eighty-seven thousand five hundred dollars (\$87,500), these two items netting the farmers two hundred and sixty seven thousand five hundred dollars (\$267,500).

There is a general wish throughout to see the district more thickly settled, and I trust a strong effort will be made to induce settlement of the large areas of first class farming land yet to be homesteaded here.

APPENDED is a statement of the work of the year:—

Number of letters received . . . . .	1,769
“ letters sent . . . . .	1,755
“ applications for patent received . . . . .	71
“ applications for patent recommended . . . . .	62
“ homestead entries . . . . .	177
“ homestead entries cancelled . . . . .	99
“ pre emption entries cancelled . . . . .	48
“ hay permits issued . . . . .	279
“ returns to head office . . . . .	180
Total revenue for the year . . . . .	\$6,791 49

I have the honour to be, Sir,

Your obedient servant,

D. A. McEWEN,

*Agent of Dominion Lands.*

DOMINION LANDS OFFICE,

YORKTON, ASSA., 23rd December, 1898.

The Secretary, Department of Interior,  
Ottawa.

SIR,—Enclosed please find a statement of work performed at this office, for the year ending 30th June, 1898.

I have no remarks to make in connection with this statement, having only recently taken charge of this Agency, and am therefore not familiar, as yet, with the condition of affairs.

The country is well adapted for settlement, those already here appear to be progressing, and only need others beside them to assist in opening up roads, establishing schools, &c., when with more satisfactory railway and mail facilities, North-Western Manitoba and this portion of the Territories ought to be found perhaps the best in the West in which to live, with its adaptability both for grain and stock raising.

I have the honour to be, Sir,

Your obedient servant,

J. M. SUTHERLAND,

*Agent of Dominion Lands.*

## Department of the Interior.

STATEMENT of work performed at Yorkton Agency during the year ending 30th June, 1898:—

No. of homestead entries granted. . . . .	165
“ sales made. . . . .	2
“ entries cancelled	
homesteads. . . . .	65
pre-emptions. . . . .	13
“ mining claims recorded. . . . .	. . . . .
“ mining certificates issued. . . . .	. . . . .
“ hay permits issued. . . . .	136
“ timber permits issued. . . . .	88
“ applications for homestead patent recommended. . . . .	85
“ letters received. . . . .	2,386
“ letters sent. . . . .	2,214

PRINCE ALBERT, SASKATCHEWAN, 29th December, 1898.

The Commissioner of Dominion Lands,  
Ottawa.

SIR,—In compliance with your request I have the honour to submit to you my report on the work performed at this Agency during the twelve months ending the 30th June, 1898.

You will observe from the accompanying tabulated statement that the number of homestead entries made shows a very marked increase over that of any recent year. This increase was mainly due to a very considerable immigration of Mennonites from Manitoba, the United States and Russia, into the Rosthern and Hague settlements, who were attracted there by the encouraging reports of the success of many of their co-religionists who had previously settled in those localities; for the same reason a still larger immigration of these people is expected there during the coming season.

The year, I may truthfully say, has been a prosperous one. The harvest of 1897 was excellent: that of 1898, although not quite so luxuriant, was fairly good, notwithstanding the somewhat deleterious effects of a frost in the month of June last, a very unusual occurrence in this district, which unfortunately cut down the more tender of the growing crops; the oat crop being the heaviest sufferer from this cause.

The cattle industry is steadily increasing. The export trade in live stock for the European market is assuming considerable proportions, and the prices realized are encouraging, and are having their effect upon the prosperity and comforts of the people.

Upon the whole the settlers are fairly contented with their present condition and hopeful for the future. The immediate construction of another railway line giving more direct communication with the eastern markets now in prospect, will tend to allay any discontent in the remote eastern settlements. It will also open out for further settlement an immense tract of land, which for beauty, natural advantages and fertility cannot be surpassed in any country.

I have the honour to be, Sir,

Your obedient servant,

JOHN McTAGGART,  
*Agent of Dominion Lands.*

STATEMENT of work performed at the office of Dominion Lands, Prince Albert, during the year ending the 30th day of June, 1898 :—

Letters received . . . . .	1117
“ sent . . . . .	1005
Circulars received . . . . .	18
“ sent . . . . .	106
Applications for patent received . . . . .	63
“ “ recommended . . . . .	42
Homestead entries cancelled . . . . .	50
Pre-emption “ “ . . . . .	6
Homestead entries granted . . . . .	143
Pre-emptions paid by M.B. Warrants . . . . .	1
Returns to head office—	
Dominion Lands . . . . .	60
Cash statement . . . . .	60
Work performed . . . . .	12
Hay . . . . .	20
Immigration . . . . .	12
Labour . . . . .	24
Immigration Contingencies . . . . .	12
Dominion Lands “ . . . . .	12
Office attendance . . . . .	12

DOMINION LANDS OFFICE,

REGINA, ASSA., 22nd November, 1898.

The Secretary, Department of the Interior,  
Ottawa.

SIR,—I have the honour, in reference to your circular of the 14th inst., file 448472, to forward herewith my annual report, which, in connection with other details, includes the work done in this office from the 30th June, 1897, to the 30th June, 1898, as follows :—

Total number of letters received . . . . .	7030
“ “ “ sent . . . . .	5882
“ “ circulars received . . . . .	44
“ “ “ sent . . . . .	125
“ “ applications for patent received . . . . .	350
“ “ “ “ recommended . . . . .	283
“ “ homestead entries cancelled . . . . .	135
“ “ pre-emption “ “ . . . . .	86
“ “ homestead entries granted . . . . .	475
“ “ sales . . . . .	26
“ “ hay permits issued . . . . .	677
“ “ returns to head office—	
Dominion Lands . . . . .	48
Seed grain, in duplicate . . . . .	160
Cash statement . . . . .	12
Work done . . . . .	12
Hay and timber . . . . .	48
Contingent immigration . . . . .	2
“ Dominion lands . . . . .	12
Office attendance . . . . .	12

## Department of the Interior.

Notwithstanding the unfavourable weather experienced this fall, the result of the season's work has been very satisfactory. The yield from the wheat crop has not only been large, but exceptionally good, the greater portion grading "No. 1 hard." I am not in a position to quote the exact figures, but I am satisfied that the yield has been largely in excess of former years. Other grains have also yielded largely, and there has been an increase in the acreage sown.

Roots and vegetables of all kinds have been an enormous crop, and the high prices realized make this year's yield very remunerative.

Stock raising has increased in a remarkable degree in this district, owing, no doubt, to the favourable summer weather, the good pasturage and the additional number of settlers engaging in this industry. The prices have been exceptionally good and, while train load after train load of cattle, sheep and horses have passed through to Eastern markets, a large proportion have also been shipped to British Columbia.

No doubt the favourable terms offered by the North-west Government will induce many of the settlers to import an improved grade of stock for breeding purposes.

There have been no serious prairie fires to injure the grass in this district, and there is every prospect of good pasturage for the coming season.

The dairying industry is increasing to a remarkable extent. The numerous dairies erected have proved to be a great source of labour saving to the farmers' wives, and the products are bringing the highest prices in European and other markets.

During the month of July, the Minnesota, Michigan and Wisconsin Press Associations visited different parts of this district and, from the remarks made by some of the members as well as from communications received, I am of the opinion that this visit will have a beneficial effect on the Territories, as a whole.

By referring to the attached statement of work it will be observed that the number of homestead entries that have been granted, is largely in excess of those granted for a number of years, and, of these the entries granted to new comers are largely in the majority, showing that there has been a steady flow of immigrants from all parts.

The settlers everywhere appear to be contented and prosperous. Numerous letters of inquiry are being received from all parts of the world, and never before have there been such strong indications as at present, of a great influx of immigrants during the coming year.

I have the honour to be, Sir,

Your obedient servant,

A. J. FRASER,

*Acting Agent of Dominion Lands.*

DOMINION LANDS OFFICE,

LETHBRIDGE, ALBERTA, 31st December, 1898.

The Commissioner of Dominion Lands,  
Ottawa.

SIR,—I beg to submit for your information the following report respecting the Lethbridge Agency.

It is gratifying to be able to report a marked improvement in land transactions during the past year, a healthy and vigorous immigration, and a steadily increasing feeling of confidence in the unlimited resources of the district.

The greater number of homestead entries have been made in the south-eastern portion of the district, in the vicinity of Cardston; many homestead entries have also been granted in the vicinity of Pincher Creek, where the soil is rich black loam, well watered with springs, rivers and lakes, and having a good supply of timber. These



lands were formerly considered only fit for grazing purposes, but cultivation has demonstrated the fact that they will yield abundantly all cereals, roots, and small fruits, especially when the information and advice of the Experimental Farm, relative to the best varieties to cultivate, is sought and taken advantage of. A number of good settlers have also located on lands in the vicinity of Medicine Hat.

The crops in the vicinity of Cardston and Pincher Creek were very good the past season, and the prices obtained satisfactory, the completion of the Crows Nest Pass Railway through the mining towns of British Columbia having opened up an excellent market for all products of the district.

Work on the St. Mary's Irrigation Canal was commenced last summer by the Alberta Irrigation Company, and has been pushed steadily on, there being no snow or frost so far to interfere with construction work, and it is expected that some sixty miles of the canal will be completed in 1899. Some idea of the important bearing on the prosperity of this district the construction of this canal must exercise, may be formed when it is realized that some \$500,000 will be expended on construction work, and some 500,000 acres of the arid lands of the district reclaimed, and as no doubt all the irrigated lands will be cultivated so soon as available, and the intention being to divide the lands into small holdings, the population of the district must be largely increased within a very short time. Much credit is due to the Irrigation Company for the energetic manner in which they are pushing forward the work. Cattle ranching is in a prosperous condition, the past season having proved very favourable, and the prospects for the coming season excellent, there being very little snow or cold weather up to the present time. Should we now have some severe weather it cannot, in all probability, last long, and the cattle are in the best of condition to withstand cold weather and other hardships for some time. About 10,000 head of horned cattle and 1,000 horses have been exported from this district the past season, and about 6,000 young cattle imported as stockers; some thoroughbred stock has also been imported.

The sheep industry is also in a prosperous condition, but I have not been able to obtain reliable information as to the number of sheep exported and imported.

Prairie fires have done but little damage to the ranges during the past season, owing no doubt to the comparatively heavy rainfalls keeping the grass green all summer.

The Galt Coal Mines have been running to their full capacity during the entire summer, which means much to the prosperity of Lethbridge and vicinity.

Wolves have done comparatively little damage to stock during the past year, their numbers, if anything, having been diminished by reason of the bounty paid for killing them.

The appointment of sub-agents has proved a great benefit to the incoming settlers, and, so far as I am aware, they have given entire satisfaction, and I believe their usefulness is appreciated by those who have required their services.

I have the honour to be, Sir,

Your obedient servant,

W. H. COTTINGHAM,  
*Agent of Dominion Lands.*

## Department of the Interior.

STATEMENT of work performed at Lethbridge Agency during the year ending 30th June, 1898 :—

Number of homestead entries granted . . . . .	195
Sales made . . . . .	51
Entries cancelled—	
Homesteads . . . . .	36
Pre-emptions . . . . .	8
Mining claims recorded . . . . .	.
Mining certificates issued . . . . .	.
Hay permits issued . . . . .	56
Timber permits issued . . . . .	78
Applications for homestead patent recommended . . . . .	46
Letters received . . . . .	2368
“ sent . . . . .	1735

DOMINION LANDS OFFICE,

EDMONTON, ALBERTA, 23rd November, 1898.

The Secretary, Department of the Interior,  
Ottawa.

SIR,—I have the honour to report on the transactions of the Edmonton Dominion Lands Agency for the year which ended on the 30th June last. The schedule appended hereto sets out these transactions so far as they are capable of tabulation. A considerable business is done for the Department of Indian Affairs in handling the lands upon Reserve 136, to which no allusion is made in the statement of work.

The Edmonton Agency now embraces the lands which, until 1st July, 1897, were administered from Wetaskiwin. The number of homestead entries granted in both agencies for the year ending on the 30th June, 1897, was 279. The number granted in the combined agency for the year ending 30th June last is 623.

The sales made by the Canadian Pacific Railway Company's agent at Edmonton for the former period numbered 22, and for the latter period 116.

The increase in entries and sales fairly indicates the improvement in the ratio at which settlement is now proceeding in Northern Alberta.

### THE INDUSTRIAL SITUATION.

An indication of the industrial progress of this region is afforded by the volume of the export of agricultural products, roughly estimated at \$50,000 in 1896, and at from \$400,000 to \$500,000 in 1897.

It is satisfactory to be able to state that the industrial condition of Northern Alberta to-day appears to be healthy and progressive. In order to maintain it so it would seem to be necessary to encourage dairy and poultry products as much as possible, and to assist the communities, so far as it may be practicable to do so, in road improvement and in the establishment of a comprehensive system of cold storage. Many settlers have located at a distance from the railway much in excess of that over which wheat and oats can be profitably hauled to a railway point. They have to depend mainly upon grain growing, not possessing the capital necessary for engaging in cattle raising. It is possible that, notwithstanding their distance from railway points, they may be able to establish butter and cheese factories, but this they cannot do with a fair assurance of success until a cold storage system is available at railway points. The poultry industry could be profitably carried on at a distance from the railway if railway

points afforded cold storage accommodation; and this is the best possible business for the encouragement and rapid advancement of new and poor settlers. The question of cold storage is of vital consequence, and I trust that means may be devised for establishing a thoroughly efficient system. There is no other direction in which governmental and individual energy could be turned to better account. The difficulty in inducing private capital to engage in the work lies in the prevalence of the notion that a comprehensive cold storage system could not be made instantly remunerative. This fear is doubtless well founded. The producers and the trade will both have to be educated. The settlers will have a good deal to learn about the various breeds of fowl and the right methods to adopt to get the best results from the industry. The cold storage company is almost certain to experience difficulty in classifying the produce, and must rely upon the local managers of the warehouses to gradually bring the settlers to understand that it is to the interest of both settler and company to exert the utmost care in handling these commodities. The settler will, however, learn in time that his care is profitable, as he will be paid according to the quality of his products.

With suitable distributing facilities and machinery in the Kootenay and in British Columbia generally, a large warehousing company equipped to handle the whole poultry and home dairy product of Northern Alberta, could in a comparatively short time secure a first-rate business, and it is impossible to conceive any enterprise which would more satisfactorily promote the agricultural industry of this region.

It would have, at present, the produce of about 5,000 settlers between Wetaskiwin and Edmonton, and would need warehouses at both of these points, as well as at Leduc.

#### CROPS.

The crop yield of the Edmonton District this year is estimated in bushels of wheat, 600,000, oats, 800,000, barley, 100,000. The frost of last June greatly injured the crop which was sown broadcast in low-lying lands and which is supposed to have been less vigorous and less capable of resistance than that which was sown by press drills. There is said to be but little smut in the wheat this year and both wheat and oats are a good sample.

#### CROP STATISTICS.

It would appear to be a somewhat simple matter to obtain satisfactory statistics of the crop from the owners of threshing outfits by licensing such owners after examination of the apparatus to be employed, and upon certificate of its sufficiency. It would not involve considerable work if the threshers were required to make an annual report—say on 1st February or March—of the result of the season's operations. It is to be hoped that the local Government will take action presently to this end.

#### CATTLE.

There has been a large increase during the last two years in the number of cattle, horses, hogs and sheep, and an improvement in quality may be expected to follow the action of the local Government in facilitating the importation of thoroughbred stock. Northern Alberta is peculiarly well adapted as a cattle country, with its abundance of nutritious grasses, timber for shelter purposes and its water supply. Breeders of thoroughbred stock in Eastern Canada would find a profitable market in this country, and it is matter for surprise that none of them have established a depot here to which yearlings might be shipped, and where they could be cheaply maintained pending sale.

#### FIRE PREVENTION.

The belief is gradually gaining ground that the only effective means of checking the fires which have hitherto done such serious damage throughout this region, in

## Department of the Interior.

common with the whole of the Western Territories, lies in the opening up of the roads and in clearing these roads as occasion may require, of all inflammable material. Fire and Statute Labour districts are being erected everywhere, under the provisions of the Territorial Ordinance. This Ordinance and the one relating to fire prevention, are excellently designed to promote the important object which the Legislature has aimed at.

### MINING.

The whole product of gold on the North Saskatchewan River has been for the year 1898 about \$17,000. This is greatly under the product of former years, which has occasionally risen above \$50,000. The diminution of the product is due in a great measure to the more prosperous condition of agriculture, which has afforded profitable employment to many settlers who formerly spent a good deal of their time in hand mining on the river. The exposed bars in the river have yielded to surface working during the past 30 years an amount of gold which must aggregate a large value. The repeated manipulation of the surface gravel has, however, extracted so large a part of its gold that it no longer yields profitable wages, and the hand miner is turning his attention more to bench operations, to which he is likely to largely confine himself in the future.

The greater part of the gravel in the bars which are partly exposed will have to be worked by machinery if their value is to be realized. Dredge mining has not as yet produced very satisfactory results. This is said to be due to the small capacity of the dredges hitherto employed and the large expenditure on wages account. The same number of men required to handle a dredge having a capacity of from 100 to 300 yards per diem is said to constitute a force adequate to the manipulation of a dredge with a capacity of from 2,000 to 3,000 yards. The wages and working expenses being pretty much the same in both cases it can readily be seen that the small dredge may be unable to yield a profit in working gravel which will yet yield to the larger dredge very handsome returns.

A first-class dredge with a capacity of 3,000 cubic yards per diem has lately been completed by Mr. Arthur E. Hogue, representing a company which holds under lease about 140 miles of the river.

It has not been thoroughly tested but is expected to give a satisfactory account of itself next season and to demonstrate the profit of subaqueous mining when prosecuted under favourable conditions.

### THE NORTHERN MINING FIELD.

It is believed that more than 2,000 prospectors went north from this point between August, 1897, and June, 1898. As my returns show, more than 800 of them took out Free Miners Certificates in this office and those certificates which issued from the Calgary office were also taken by men who set out from Edmonton.

It has been stated in the newspapers occasionally that these prospectors were misled by Edmonton residents into an expectation that there was an overland route from this point to Dawson. This statement is incorrect—I venture to assert that not one prospector of the 2,000 received such assurance from a resident of Edmonton. Those of them whose destination was Dawson took this route because they believed it to be safer than, and as practicable as, the coast routes at that time available. They were going into a practically unexplored country; and all of them realized that they were doing so.

The majority of those who went north from Edmonton either took the Mackenzie Water Route or intended to prospect the Peace and Liard Rivers and those of their tributaries which are perhaps more easily approachable from this point than from any other.

The trail to Lesser Slave Lake which has been established by the Territorial Government offers a convenient avenue to the Upper Peace River region and, as far as it goes, a practicable cattle road. It is to be hoped that it may be extended to further

facilitate the introduction of Alberta's cattle to the northern mining regions. In this capacity it is a work of great advantage to the pastoral industry of the west.

GREAT SLAVE LAKE QUARTZ.

One notable result of the prospecting operations carried on during the past year is the ascertainment of a vast and highly mineralized region in the vicinity of Great Slave Lake. Many samples of galena and quartz have been brought out for assay, but although the assay reports are alleged to be satisfactory their actual effect is not as yet definitely and publicly known. If the region referred to proves to be capable of profitable development machinery may be introduced presently *via* Herschell Island and the Mackenzie River, and general mining supplies down-stream from Edmonton.

THE TIMBER OF ALBERTA.

The revenue from this source is not large although in excess of last year. The quantity and quality of the timber within convenient reach of mills operating at this point have been rapidly reduced by fire within the past ten or fifteen years. It is possible that large areas of green spruce still exist on the affluent waters of the Upper Saskatchewan, but practical millers here are of opinion that fire has overrun the upper country to such an extent as to leave very little timber of merchantable value. A large proportion of the manufactured lumber consumed in the Edmonton District is now drawn from British Columbia, and year by year we shall have to look to that market for an increasing quantity.

I am, Sir,

Your obedient servant,

R. A. RUTTAN,

*Agent of Dominion Lands.*

STATEMENT of work performed at Edmonton Agency during the year ending 30th June, 1898:—

Number of homestead entries granted.....	623
Sales made .....	12
Entries cancelled—	
Homesteads .....	234
Pre-emptions.....	9
Mining claims recorded.....	27
Mining certificates issued .....	840
Hay permits issued .....	139
Timber permits issued.....	385
Applications for homestead patent recommended.....	422
Letters received.....	5,034
Sent.....	4,957

## Department of the Interior.

DOMINION LANDS OFFICE,  
RED DEER, ALBERTA, 24th December, 1898.

The Commissioner of Dominion Lands,  
Ottawa.

SIR,—I have the honour to submit my report for the year ending the 30th of June last. During this period one hundred and eight homestead entries, of which one was a military homestead, were granted at this office; one pre-emption payment, one general sale, and one free church grant of 40 acres were also recorded. The number of homestead entries cancelled is sixty-seven, and of pre-emption eight. One hundred and thirty-nine applications for homestead patent were received and one hundred and twenty were approved: one was refused. During the same period eighty-one hay, four coal-mining and ninety timber permits were issued; nineteen hundred and forty-six letters and twenty-four circulars were received, and seventeen hundred and sixty-one letters sent out. Forty-eight general, forty-eight hay permit, sixteen seed grain repayment and twenty-eight timber returns were forwarded to the Department. The number of homestead entries, as shown in the above summarization, is much larger than that of the previous twelve months, and there is every reason to expect, in view of the better times, and the impetus imparted thereby to immigration, that a still greater improvement in this respect will be manifest at the close of the current Departmental year. Cancellations of homestead entries have been numerous, but this is not to be regarded as an unhealthy symptom. The great proportion of the lands thus affected were primarily acquired by settlers who had no capital, or but little, and a very limited acquaintance with practical farming, and who soon became discouraged by their want of success and gradually drifted out of the country. All these homesteads, with few if any exceptions, have been re-entered, and by a much better type of settler. So that the district has reason to congratulate itself upon the weeding out of a class, which would have contributed little or nothing to its material well-being or agricultural advancement. It is pleasant to be able to report that the crops, though not quite up to the mark of last year, have been exceedingly good. A noteworthy feature in connection with them is the increased production of wheat, the return being largely in excess of that of 1897, and of a superior quality. The great percentage of it is Red Fife, and will, it is supposed, grade No. 1 hard. Hitherto, the farmers of this district have approached the cultivation of wheat with a certain degree of hesitancy, proceeding, for the most part, from doubts as to the adaptability of the climate, but the results of the last two years have had a tendency to dissipate this as well as other misconceptions, and it is probable that, in the future, the areas sown with this cereal will be widened, year by year. The district creameries at Innisfail and Red Deer have not receded from the business-like position taken by them, two years ago, under changed conditions of management. Their operations have been conducted this season on a much more extended scale, and the output is proportionately larger. The Red Deer Creamery is credited with an advance in production of 42 per cent, and the Innisfail Creamery has been similarly successful. In recognition of the better prices obtained, and the encouraging indications of the future, an advance of fifteen cents per pound during the winter months has been decreed to the patrons. Last year the advance was ten. Before leaving this subject I might add that the market continues to be British Columbia, which absorbs the entire output, and would take more if it could get it. The Icelandic Colony is now applying itself solely to the manufacture of cheese, of which a very large quantity has been turned out this season. The precise figures have not come in to me, but I am informed, on credible authority, that they are in the neighbourhood of 50,000 lbs. The quality of the cheese is so excellent that the Colony has no difficulty in finding ready markets, the bulk of it being sold to the local merchants of the district, and the Hudson Bay Company's store

at Calgary, while direct shipments of small quantities are also being made to British Columbia. It is probable the latter mode of disposing of it will be the one adopted for the future. Prairie fires again paid us their annual visit, but happily, beyond sweeping off a few stacks of hay, and a small extent of fencing, inflicted very little damage. But, in the big woods in the north-western corner of the district,—principally in the vicinity of the Blind Man River,—fires raged for days, and much valuable timber was destroyed. Many of these fires owed their origin to the criminal carelessness of settlers, and, in eight instances, were brought home to them. Convictions in each of these instances were obtained before magistrates, through the exertions of the alert and indefatigable non-commissioned officer in charge of the North-West Mounted Police detachment at Red Deer. Whether these lessons will have a salutary effect and induce those so nearly interested to exercise greater caution in the future remains to be seen. In contrasting the present with the past condition of the district, one cannot help being struck by the immense material progress achieved within a comparatively recent period. Evidences are visible on every side. The areas of cultivation have been enlarged and cultivation itself is more thorough; farm houses, outbuildings and even fencing display more neatness and solidity of construction. The farmer's domestic comforts have increased, his table is better supplied, his toil lessened. Religious and educational facilities have multiplied. New roads are constantly being opened up and strong and durable bridges make communication between neighbours and markets easy and comfortable. And so with the towns of Innisfail, Red Deer and Lacombe—they, too, seem to have caught the favouring breeze. On ordinary week days, their streets are lined with wagons loaded with grain and general farm produce; the merchants have doubled and trebled their staffs; fresh representatives of the different trades are coming in and settling down to competitive businesses, and—the strongest adducible proof of the rapidly increasing prosperity of this northern country,—the Calgary and Edmonton Railway Company have been obliged to enlarge their general traffic service, in order to meet the growing demand upon their carrying powers. From a social point of view, also, an agreeable change is to be noted. Amusements, for which the toilers of the district have, hitherto, had no time and but little inclination after their severe hours of labour, are now coming well to the front. Lawn tennis lends its charm to the summer season, while cricket and football matches are interesting features of the occasional holiday. A commodious skating rink has been erected at Red Deer, and a curling club is in process of formation. These and other means and sources of amusement serve to enliven the year, and show that people are now in a position to withdraw many a welcome hour from the dull pursuit of business and apply it to pleasurable and invigorating exercises.

I have the honour to be, Sir,

Your obedient servant,

J. G. JESSUP,

*Agent of Dominion Lands.*

DOMINION LANDS OFFICE,  
CALGARY, ALBERTA, 9th December, 1898.

The Secretary, Department of the Interior,  
Ottawa.

SIR,—I have the honour to submit my report of the work performed in this office during the year ended 30th June, 1898.

Homestead entries number about double those granted during the preceding twelve months, the revenue amounting to \$14,514.85, exclusive of a large amount paid at head office on account of grazing leases, which should be credited to this office. This being

## Department of the Interior.

a Lands and Crown Timber Office combined, it is only fair that the revenue from timber should be mentioned in this report as well, which amounted to \$9,787.33, making the total revenue from both \$24,502.18, and shows a large increase over the total for the year ended 30th June, 1897. The expenditure this year amounted to \$2,665.58, made up of salaries, \$2,078.13, contingent \$587.45, comparatively speaking, very small—for instance, the expenses covering the preceding twelve months, exclusive of the agent's salary, who was paid as Superintendent of Mines, amounted to \$4,599.84, exceeding the whole of this year's expenditure by \$1,934.26.

A large number of letters were received and sent and three hundred and fifty-five (355) hay permits issued, covering 10,873½ tons. The dues and fees received on account of the latter, including some payments on grazing lands, amounted to \$2,318.55.

In my last year's report, I predicted 1898 would be a busy and prosperous year for Alberta in every way, and I am now greatly pleased to say that everything is in an exceedingly prosperous condition in this district, and that my hopes and expectations have been fully realized; the stock, the main industry of this portion of Alberta, has never been in a better state; the crops, excellent, the weather during the autumn having been all that could be desired, the grain was all safely gathered and the grass has cured well on the ranges, which ensures good winter feed for the stock running out. The creameries have been conducted in a very satisfactory manner again this year, and the farmers are pleased. The lumber trade has improved wonderfully, and there is no better sign of prosperity.

Immigration into the country has been quite large; the amount of people accommodated during the year at the Immigration Hall amounted to 1213, but that of course does not afford an adequate means of estimating the total number of settlers, as very many put up at hotels.

The city of Calgary is forging ahead quite rapidly. The C. P. Ry. Co. are erecting workshops and a round house at a cost of about \$100,000 and making this place a divisional point. The population is increasing and I expect to see it soon become a wholesale centre.

I have the honour to be, Sir,

Your obedient servant,

J. R. SUTHERLAND,  
*Agent of Dominion Lands.*

STATEMENT of work performed at Calgary Agency during the year ending 30th June, 1898:—

Number of homestead entries granted . . . . .	123
Sales made . . . . .	17
Entries cancelled—	
Homesteads . . . . .	64
Pre-emptions . . . . .	11
Mining claims recorded . . . . .	21
Free miners' certificates issued . . . . .	65
Hay permits issued . . . . .	362
Timber permits issued . . . . .	222
Applications for homestead patent recommended . . . . .	94
Letters received . . . . .	3325
“ sent . . . . .	2882



## DOMINION LANDS OFFICE,

KAMLOOPS, B.C., 22nd November, 1898.

The Commissioner of Dominion Lands,  
Ottawa.

SIR,—In accordance with circular of 14th inst., No. 448472, I beg to submit the following report for the twelve months ended on the 30th June last:—

No. of homestead entries granted . . . . .	41
“ sales . . . . .	25
“ entries cancelled . . . . .	31
“ applications for patent recommended . . . . .	26
“ town sales . . . . .	9
“ hay permits issued . . . . .	15
“ mining records . . . . .	3
“ miners' licenses . . . . .	5
“ letters received . . . . .	1326
“ “ sent . . . . .	1410

The recent issue by the Department of a number of township plans has enabled me, with the assistance of the Homestead Inspector, to settle several long-standing cases, and so remove causes of complaint.

I may add that Mr. McDonald's time is almost entirely occupied with outside matters, or with matters in connection with timber.

I am, Sir,

Your obedient servant,

E. A. NASH,

*Agent of Dominion Lands.*

## DOMINION LANDS OFFICE,

NEW WESTMINSTER, B.C., 23rd November, 1898.

The Commissioner of Dominion Lands,  
Ottawa.

SIR,—In accordance with the usual custom and Departmental instructions, I beg to submit a brief report of the work of this office for the year ended the 30th June last, together with a few comments relating to the time which has elapsed since that date.

1st. The monthly statements of work show the collections made, the new entries and the returns forwarded, as well as a summary of the correspondence, which statements have doubtless been summarized at the Department ere this date.

2nd. My report for the year ended 30th June, 1897, referred to the moneys outstanding on homestead sales and general sales, but I have to say that the amounts received on account of these items have not been so large as I expected them to be. The excitement over mining and mining claims throughout the province appears to have absorbed nearly all the attention of people coming to the country, and the agricultural

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aspect of matters has been largely in abeyance. The people on the homesteads, and those who have made purchases, have not been able to dispose of very many parcels of these lands, and, therefore, have not been able to make desired payments. Reviewing the situation, however, there is a great deal of improvement in the farming interests of the district. More clearings are being made, better buildings are being erected, and more remunerative prices are being obtained for produce. More satisfactory arrangements are being made for the exportation of fruit to the North-west and Manitoba, where the market appears to be secure.

In conclusion, I may refer to what you already know, in respect to the disastrous fire of the 10th and 11th September last in the city of New Westminster, destroying our offices, among many others, and sweeping away a great many of our papers, etc. As we have all the original books of entry, and many of the auxiliary books, nearly all the work can be reconstructed with very little inconvenience to the public. I am pleased to report that there is a spirit of great hopefulness and energy pervading the business men and residents of the city, and that a large number of the burnt-out places are being replaced.

Respectfully submitted,

JOHN McKENZIE,  
*Agent of Dominion Lands.*

## No. 2.

OFFICE OF THE SUPERINTENDENT OF MINES,  
CALGARY, ALBERTA, 12th December, 1898.

J. G. TURRIFF, Esq.,  
Commissioner of Dominion Lands,  
Ottawa.

SIR,—I have the honour to report through you for the information of the Minister of the Interior, on the work of my office for the Departmental year ending the 30th June last. I have also as requested brought down my report on several subjects to this date.

From July 18th to August 3rd, engaged in making surveys in the vicinity of Laurie, B.C.

From August 11th to 20th, visited Macleod and Lethbridge in connection with certain land claims in that vicinity.

From September 29th to October 8th, engaged making an inspection of the country in the vicinity of the Wintering Hills.

October 18th to 20th, went to Golden in connection with the land claims at that point.

October 27th to November 5th, inspected portions of the North and Middle Forks of the Old Man's River, under instructions from the Minister.

November 20th to 28th, visited Lethbridge in connection with Alberta Irrigation Company's scheme.

December 18th and 19th, went to Banff.

December 28th and 30th, engaged going to Golden in connection with certain land matters at that point.

January 12th to 22nd, made inspection along the route of Crow's Nest Pass Railway from Lethbridge to the summit of the Rocky Mountains in connection with timber trespasses.

January 29th to 31st, visited Banff.

February 3rd to March 18th, on trip to Ottawa and return.

March 23rd to 25th, went to Donald to examine into and report on certain land matters at that point.

April 11th to 14th, at Edmonton in connection with Immigration matters.

June 14th to 18th, engaged making certain timber seizures along the line of the Crow's Nest Pass Railway.

June 24th to 29th, engaged making surveys at Revelstoke and vicinity.

Reports concerning the above were forwarded shortly after the various visits.

## CROPS.

Throughout the greater portion of the Territories the crops during the past season have on the whole been first-class. In some portions of Northern Alberta, however, owing to the scarcity of rain-fall during the early part of the year, May and June, considerable injury to cereals was caused. Although the crop was not wholly a failure, its growth was so retarded by the drought that it did not fully mature, but though not as valuable as it would have been had it thoroughly ripened, it is yet of very considerable value for feeding purposes and as there is a considerable amount of stock, with a good local beef market, or rather a market in close proximity, being in the mining regions of British Columbia, particularly the Kootenays, coupled with the improved railway facilities and very reasonable cost of transportation, no doubt a large number of cattle

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will be fed during the coming winter, thereby furnishing a fairly good return for inferior grain.

The hay crop generally was a very good one, and the season for the curing of the same fairly propitious, so that even should the winter prove a severe one, it is probable that there will be very little loss of stock, except of course among the very large ranchers, who cannot under the system adopted by them, feed to any considerable extent.

### NATURAL HAY VS. CULTIVATED HAY.

The settlers or farmers of Alberta cannot too soon enter upon the cultivation of hay, so far as the same is intended for shipment. There is already a considerable and profitable market for this article in the mining regions of British Columbia, a market which will steadily grow; for no matter what may eventually be the utilization of power other than horses, very much work in the mining regions, particularly during the earlier stages of development, can only be accomplished by the use of horses, and therefore the consumption of hay will be very materially on the increase. A quantity will no doubt be required for dairy purposes. A considerable amount of native grasses has been pressed and shipped into the Kootenays, but it does not take favourably in the market. From some cause or other, native hay after being baled a short time, assumes a musty appearance, in fact it is to some extent musty, though not to nearly the extent its appearance would indicate. Most of the native grasses being water grasses, it is probable this mustiness is caused by the breaking of the fibre in baling, which being broken, the moisture is released and a certain amount of heating or fermentation ensues which causes the mustiness, and that produces a slight dust which is considered or found to be injurious to horses. It would appear as yet that timothy is the only grass that meets the requirements of the trade, so far as baled hay is concerned. Whether *Bromus* will ever become popular for horse feed remains to be seen. The cultivation of this latter grass is rapidly on the increase, and its increase for the future will be very much greater than in the past, from the fact that already considerable seed is being produced in the Territories. The amount of seed thus produced would appear to be very large in proportion to the area, consequently it will rapidly decrease in price. The high price has hitherto prevented the increase in the area placed under it. The price heretofore has been about 15 cents to 20 cents per pound. In a very short time it will probably be produced in the Territories at one-third that figure.

### IRRIGATION.

Closely allied with the growth of hay is this subject. The results of irrigation still continue as encouraging as in the past, but it is easy to see that the limit that can be reached by individual effort is only a very short distance ahead. If irrigation is to be increased rapidly, it can only be by combined effort, either by companies, municipalities, or by the Government taking hold and assisting it.

The Alberta Irrigation Company has commenced work and is continuing it on an extensive scale. The scheme embraces some heavy cuttings, largely in gravel, and it is expected work thereon will be actively conducted all winter, and so soon as the weather permits several hundred men and teams will be busily engaged. The canal, as at present being constructed, will carry 300 cubic feet per second, but it can be readily and cheaply enlarged to whatever capacity may be determined on. The character of the country to be served, the water available and probably, above all, the fact that the scheme contemplates, as one of its strongest features, the colonizing of the lands as fast as the water can be placed thereon, and among the colonists being a large percentage who have had experience in irrigation, lead to a strong faith for the best possible results, which if realized, and of that there is the best prospect, will prove of incalculable benefit to the semi-arid portion of the Territories. The work so far as accomplished is done with a thoroughness which bespeaks the best possible encouragement for a bright future.

## LEGISLATION IN AID OF IRRIGATION.

During the last session of the North-West Assembly an irrigation ordinance was passed, which it is thought will greatly aid the subject. There is one obstacle, and that a serious one, to overcome regarding this matter. The country requiring irrigation is at present of necessity only a stock country. It is sparsely settled, but the settlers therein, being stock-men, do not desire any more settlement, in fact discourage it as far as lies in their power, and it will therefore be difficult to get the citizens or residents in any settlement to take hold and organize under the ordinance mentioned. The more vacant land they have around them, the better for them, though inimical to the best interest of the country as a whole. If something were done on the lines suggested by the State Engineer of Wyoming, this enterprise would probably be greatly stimulated. His proposition is, that every one who has an acre under irrigation should be entitled by virtue thereof, to lease sixteen acres of non-irrigated land, or land suitable only for pasturage, and be guaranteed in his possession of same for a long term of years; the rental to be low,—he suggests a cent per acre per annum. This scheme would work out about as follows: We will assume that the settlers of any district have say 5,000 acres under irrigation; they would then be entitled to a lease of 80,000 acres; they would organize themselves as a company and take a lease of that area, probably fence it or otherwise protect it and provide shelter and watering places for their stock. Under the present system neither shelter nor watering places are provided, nor material steps taken by the parties whose stock is running thereon that will protect from eating or burning out. If a party were guaranteed his possession for a considerable length of time, he would take steps, not only to maintain it at its present capacity, but greatly increase it.

This brings us to the subject of

## WATER SUPPLY FOR STOCK BY WELLS AND WINDMILLS.

Many stockmen who have not tried the experiment, or have not seen it tested, will assert that it is impossible to furnish stock with water from wells, by pumping. They will contend that whereas it might be done during a portion of the year, during the winter when the frost is severe it is an utter impossibility. That is wholly a mistaken idea. Water can be furnished from wells by means of windmills at a cost not exceeding ten cents per head per annum for cattle.

The frost is a bug-bear, one that can be cheaply and thoroughly overcome in many ways. One has only to reflect that the water out of a well has a temperature very many degrees above freezing point, and if a well only furnishes plenty of water, so that a windmill can be run freely, ice can be prevented forming at all. But even if it is only run one or two hours in the twenty-four, it will during that time thaw out the ice that has been formed during the remainder of the day.

It is within the mark to state that 80 per cent of the grazing area of this country is to-day worthless for want of water. In short, if that 80 per cent were as well watered as the other 20 per cent is, there would be just as many cattle on it per acre. To-day there are practically none. With free grazing it seems an impossibility to obtain the funds necessary for the construction of water supply. A great deal of water could probably be furnished by means of dams, and it is worthy of consideration whether a reasonable taxation might not be imposed on stock, the proceeds of which could be utilized in promoting that industry. Such a policy would no doubt be unpopular with the present stock-men, but so is every mode of taxation, and it is not the present men who are to be considered so much as the development of the industry. With a moderate tax on stock grazing on the public domain, the stock industry could be doubled in five years, and quadrupled in ten, if the proceeds from such taxation were utilized in bonusing irrigation enterprises, thereby producing both water and winter feed, and also in sinking wells or erecting dams, storing water in those districts to which irrigation could not readily be extended. But there is still another point to be considered, and that is that without some system of regulating, or by taxation licensing to graze, there is danger,

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and grave danger of many of our best districts being eaten out and totally destroyed, which under a licensing system, could be maintained at their present productiveness probably improved. Even in those districts which are considered most suitable for mixed farming, it must be remembered that as cultivation extends many ponds and small lakes now admirably suited for stock watering, and utilized as such, will dry up. For them wells suitable and of sufficient capacity for stock watering must be provided. In many cases the cost may prove beyond what an individual settler would undertake.

### DAIRYING.

This branch is closely related to grazing, and if some scheme could be devised, as appears feasible, such as the setting apart of certain districts wholly for milch cows, those districts which now have a creamery would be greatly benefited and others so set apart would soon have others established. This subject has been discussed to some extent and many have expressed the idea that whereas the scheme in itself is a good one, it would be premature to adopt it at present; that there is any amount of pasturage and it would be time enough to discuss it when scarcity arises.

This idea is probably a mistaken one, and may have arisen from people not giving the subject sufficient attention. It is true that there is any amount of pasturage in the country, but in the districts tributary to the creameries already established, there is not a surplus of pasturage, and of that pasturage probably ninety-five per cent is consumed by stock which could just as well be grazed elsewhere, and further, dairy cows should not be permitted to mix with horses or steers, or dry stock of any kind which are above one year of age. Of course to keep separate the two classes would entail a charge or expense on the owners, but not more than the industry would warrant and the interest demands. A large portion of what might be called the semi-arid portion of the Territories, is particularly well suited for dairying, and that combined with irrigation and the adoption of a system of settlement somewhat in the style of the hamlet settlement, would enable these districts to obtain the maximum in productiveness, a return in dollars and cents of probably at least ten times that which can be obtained from a purely beef industry.

In several reports, the hamlet system of settlement, combining irrigation and dairying has been alluded to, therefore it is not necessary to enlarge on it at present. The selection of good types of cattle, which have good milking as well as beef strains, is a matter to which there should be very considerable attention given. That it is possible to attain the combination mentioned there is no doubt.

### CATTLE BEEF.

The past year has been a profitable one for this industry. The winter was good and the summer particularly so, the grass throughout the grazing areas, excepting in some parts, has thoroughly ripened so that the winter feed will be good. In portions of the Foot Hills, however, it is stated that while up to the average it is not as thoroughly ripened as it frequently has been, but still is in fair condition. The cattle are going into winter in the best possible condition.

### STOCKERS.

It is unfortunate for the grazing interests of this country that during the past eighteen months such a demand for stockers sprang up in the Middle and Western States. The results are rather deplorable. Both in Manitoba and the Eastern Provinces, where a considerable number of this class has been obtained in the past, it will be impossible to obtain a supply for the next two or three years. The breeders have sold out so bare, owing to the high prices, that so far as Manitoba is concerned (and to some extent it is stated a similar condition in Ontario exists), they have not enough on hand to consume the damaged grain of the past season. Our purely grazing

districts are equalled in few countries, and surpassed in none, for maturing. They are not, under the system adopted, first-class for breeding, and if it were possible to obtain yearlings or two-year-olds at reasonable prices, it would be good policy for our stockmen to buy and not breed.

The filling up of Northern Alberta by mixed farmers will probably to some considerable extent in time supply or provide the conditions which are desired, but it will take time, as unfortunately the settlers have not devoted the attention to this subject which is desirable, and their stock has not as a general rule had the attention paid to its breeding which the subject merits. There are, however, some districts which are notable exceptions in this respect, and no doubt their example will have a favourable, and it is hoped a rapid influence on the remainder.

ENCOURAGEMENT AFFORDED BY THE GOVERNMENT OF THE NORTH-WEST TERRITORIES IN  
THE MATTER OF IMPROVING THE GRADES OF CATTLE.

The action or policy adopted by the Government of the North-West Territories, of paying nearly the whole cost of transportation from the Eastern Provinces on well bred bulls, should prove a strong stimulant to the improvement of cattle by the smaller breeders. Stockmen who require bulls in car-load lots would not appear to need any Government assistance. It may be that the breeders in this country may object to the assistance tendered. If they should, that could be met by a bounty on thoroughbred bulls, bred in the country and disposed of for breeding purposes, equal to the cost borne by the country on those imported into it.

HORSES.

Heavy good roadsters and saddle horses are in demand, the market for same has considerably improved. \$125 can now be readily obtained for a good heavy draft horse, an increase of from 25 to 40 per cent over what was obtained two years ago.

Roadsters and saddle horses have also advanced considerably in value, though probably not more than one-half of that attained by draft horses. It is unfortunate that the Yukon excitement, or at least the attempt to reach the Yukon, or the Northern waters by pack trains did not continue a little longer. A considerable number of horses which are worthless as an asset, were got rid of by this means, but not nearly so many as desirable. Unfortunately the low price of horses enabled a great many to bring in their outfits from the Western States, Montana, Washington, Oregon, and even Wyoming. Twenty per cent duty on a \$5 horse does not amount to much, is not a deterrent to importation, most of the settlers succeeding in getting transportation as such at a very low rate.

SPECIFIC DUTY ON HORSES.

It has been urged by many that a specific duty on horses should be charged. That would certainly meet the present condition. If a special duty were charged, I think only good horses would be imported, and the country has more than it requires of inferior grades.

SHEEP.

The price of wool still continues very low and consequently the sheep industry does not go ahead as fast as it otherwise would. If wool were high, an over-production of mutton would soon be effected and down would go its price. The scheduling of Canadian sheep in the British market, on account of the scare arising out of scab, would prevent our finding a market there. The duty on shipment to the United States bars us in that avenue; besides we would have to compete with a very large extent of territory somewhat similar to our own as regards the rearing of sheep. The more Northern latitude, while it would produce better mutton, so far as quality is concerned,

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is adversely affected probably to an equal extent by the cost of breeding ; that is, the providing of shelter, etc. There is one point, however, in which we have a great advantage, namely : immunity from scab. That disease will not develop itself in this climate. Of course it will spread by contagion or contact, but that can be much more readily overcome than the danger of propagation, arising out of a warm climate.

### HOGS.

It seems surprising that no effort has been made in this Western portion of the Territories to establish a high grade pork packing establishment. The conditions for production would appear to be "A 1," and the supply of hogs could in a very short time be made ample and that of good quality, and there is any amount of coarse feed which could best be turned into bacon. It is reported that a very large amount of American bacon still finds a market at British Columbia points and also at several points in Manitoba and the Territories. In discussing this subject it is asserted by some that this country has not the population at any one point to warrant the establishment, owing to want of market for the offals, that the market for them will compensate for the extra cost of transportation, but one would imagine that it would not pay the difference between the transportation of the live hog from say Alberta to the packing establishment in the East (say some point in Ontario), and the freight of the finished product back to British Columbia.

### ABATTOIRS.

The establishment of large abattoirs and cold storage at Winnipeg is an undertaking which will be watched with a great deal of interest, and if it fulfils the expectations formed of it, it will no doubt be followed by the establishment of several others, and some point in Alberta should be very favourable for the beef and mutton trade of many points in British Columbia. In discussing this matter with a large operator in that country, he stated that while at many points the beef could with advantage be slaughtered east of the mountains and shipped in as dressed beef, a large portion of the trade of that country consists in furnishing meats for mining camps and prospecting parties, etc., which can only be done well by supplying what has been freshly slaughtered. In short, chilled beef when taken out of its cool storage deteriorates more rapidly than freshly slaughtered beef. Many contend, however, that there is sufficient market now for chilled meats in British Columbia to warrant, for the furnishing of same, the establishment of abattoirs at some central point in the beef producing area immediately east of the mountains.

### POULTRY.

With the introduction of abattoirs and consignment of chilled meats to the points of consumption in British Columbia might be coupled the shipment of poultry and eggs. Dairy products of course must go separately ; that is, shipped and stored separately. It would appear that the country immediately east of the mountains is admirably fitted for the production of poultry of all kinds, especially the northern part of Alberta, settled as it is by a frugal class of Europeans who will no doubt devote themselves largely to poultry. In fact, it is asserted that the production there is already so large that at present a very considerable trade in dressed poultry and eggs could be developed and rapidly extended. The southern portion of Alberta, which nature seems to have fitted even better than the northern as the home for poultry, particularly those classes of poultry which require a freedom from wet grass, such as turkeys and chickens, unfortunately has been peopled by a class who have devoted their attention wholly to stock, and experience here confirms that which has been asserted as the experience in other stock countries, namely, that they are the poorest material through which and out of which can be evolved anything but stock-rearing pure and simple. In dairying, poultry, cultivation of vegetables, growth of trees to beautify their homes, and in many



other lines which would tend to make life much more pleasant, their progress is practically nil. However, time will probably induce the settlement of people among them who will teach them a lesson. The extension of irrigation will inevitably bring about that result. To illustrate that this should be a profitable industry, it has only to be stated that along the main line of the Canadian Pacific Railway, and south thereof, during 85 per cent of the year, new laid eggs bring between 20 and 30 cents per dozen and poultry proportionately, that is: upwards of 18 cents per pound dressed.

#### FORESTRY AND FOREST PROTECTION.

With reference to that portion of the territory which might be called the semi-arid belt, or district, it probably might prove good policy to prevent the cutting of timber, for any purpose, from off a very considerable portion of the public domain, and such cutting should be restricted to what would be required for fencing material, and probably stock corrals. Mills are located at very many points throughout the district which coupled with railway facilities enable lumber to be purchased at reasonable prices. As to fuel, the wide distribution of coal throughout the district has conveniently settled that problem. It would not probably be inflicting much of a burden if wood was prohibited from being used as fuel beyond what can be furnished by saw-mill offals, or from the tree tops of what was required for fencing and corrals. Most of the settlers are doing well and are in a position to pay for their fuel, and the majority now pay only the cost of mining same, about one to two dollars per ton, teaming it themselves from the pit mouth. It is within the mark to assert that within the district mentioned probably 75 per cent of the fuel consumed during the winter months is furnished by coal. The right to take fences, post and corral poles should be granted under most stringent supervision and the area on which that is to be done limited, thereby minimizing the cost of supervision; and without strict oversight the destruction of timber will continue as in the past. The general granting of permits to cut timber has proved productive of forest fires and will continue to do so until the foot-hill country and other broken parts thereof, now covered by timber, and which are valuable only for timber production are wholly denuded of same, and the result will be disastrous, in fact has been already in the way of floods in our mountain streams.

Along the beds of many of the streams and many portions of the country which have been, or could with advantage be reserved for stock watering and shelter purposes, experimental forestry might be cheaply carried on with a very strong prospect of success. These points are so widely distributed that the settlers generally would have brought direct to their notice a most valuable lesson and in a short time would probably follow it up by tree planting on their own grounds.

#### COAL MINING.

The chief points of production have been during the past years the collieries of Lethbridge, Canmore, and Anthracite, supplemented by considerable outputting of lignites along the Souris River, Red Deer, Knee Hill, Sheep Creek, several points in Southern Alberta, at Edmonton, Medicine Hat, and in the vicinity of the Cypress Hills and Wood Mountain. It was hoped that by the time this report was ready the writer would have been able to furnish the full statistics of all coals produced throughout the Territories. He has been disappointed in obtaining the returns of all the important centres, but hopes to obtain them shortly, when they will be sent as a supplement to this.

#### STATISTICS

An attempt has been made to obtain full and reliable statistics as to the output of beef, mutton and pork, from Manitoba and the Territories for export, and approximately the local consumption of same and the same data regarding the export of hay, vegetables and coarse grains used only for feeding purposes and exported for that pur-

## Department of the Interior.

pose. It will probably be obtained, and, if so, forwarded as a supplementary report. This season of the year is not propitious for obtaining such data, as the parties from whom they must be obtained are now experiencing the busiest portion of the year.

### PETROLEUM.

Very considerable interest is being taken in experiments now being conducted by the Geological Branch of the Government in testing for petroleum in the Victoria Settlement, on the North Saskatchewan River, and also at Athabasca Landing and Pelican Rapids on the Athabasca River. The Geological Branch will no doubt report fully as to the results of the experiment and the probable prospects. Some little attention is also being devoted to petroleum, or the probabilities of obtaining the same, in Southern Alberta.

### PLACER GOLD MINING.

Very considerable attention has been devoted to this subject with a view to gold production on the North Saskatchewan, Athabasca, Peace and other northern rivers; but so far in the majority of cases it would seem not to have progressed beyond the limit of speculation. The Saskatchewan Gold and Platinum Proprietary of London, England, have expended between \$40,000 and \$50,000 during the past season in the building of plant, which it is hoped will successfully and profitably save the fine placer gold in the Saskatchewan River. It is asserted that any process heretofore adopted has not saved 50 per cent of it. The management of the company mentioned appears to be in first-class hands, that of Mr. Hogue, and the plant as a dredge plant is A 1 in every respect. The machinery for the gold separating portion of the plant is also A 1; no money has been spared in procuring the best, but of course, as the manager says, it is still a huge experiment, and he may find on testing that very considerable modifications or changes will require to be made in his gold separating apparatus. Unfortunately, owing to the manufacturers not furnishing the plant as soon as agreed upon, there has been a loss of some two months, the dredge and separator not being completed till November, when the temperature became so low that the gold separating apparatus could not be tested. All the other parties interested in this matter, that is those who have leases on the rivers mentioned, would appear to be awaiting the result of this company's experiment, before incurring any liability so far as plant is concerned.

### COKE.

In a very few days, if not already, there will be several coke ovens in operation at Fernie, on the Elk River, on the line of the Crow's Nest Pass Railway, about 40 miles west of the summit of the Rocky Mountains, measured along the line of that railway. Everything seems to promise that the experiment will prove highly successful, and if so it means very much towards the successful and profitable reduction of the low grade ores of the mines of South British Columbia, lying to the west of this, namely East and West Kootenay, and what is known as the Boundary Creek and Okanagan Country. Within a short time it is expected that a hundred ovens will be in operation at this point which if the market demands, can be readily and rapidly extended till the requirements of the market are supplied, and it is anticipated at a rate probably not exceeding 50 per cent of the present cost of this necessary material. The supply of coking coals, however, is not limited to the Crow's Nest Road, as along the foot-hills east of the mountains there are illimitable areas of coal which will probably produce coke of equal quality.

### THE YUKON EXCITEMENT.

A very large number of parties attempted to reach the Yukon country *via* Edmonton, and a good deal of adverse criticism on this point has been raised by parties wh

either did not understand the condition, or from some other motives have seen fit to disparage the undertaking. The advocates of what might be called the Edmonton and Yukon Route, whether the direct overland route *via* the head-waters of the Yukon at Pelly Banks, or going down the Mackenzie River waters, and then up such streams as the Liard and Peel rivers, or *via* Peace, Omenica and Pelly rivers, etc., did not at any time designate it as the best route for the party or parties whose objective point was say Dawson City, and who desired to get through as speedily as possible. It was recommended, however, as a prospecting route, that is for those that desired to look for minerals on their way. It was not anticipated, nor is it likely to prove, that all the territory available for mining in that North-Western country is concentrated in the vicinity of Dawson; or even in the drainage basin of the Yukon River. As a prospecting route, it would appear to have been a success, though unfortunately a very large percentage of those who attempted it were totally unfitted by nature for being prospectors; but that is a condition for which the route is not blamable. As a result considerable attention is being directed to a very large mineral-bearing belt extending from the Great Slave Lake through Great Bear Lake and on to the Arctic Ocean, an immense area of country, and which in many respects can be cheaply operated, exporting the ores, if necessary, *via* the Mackenzie River and Arctic Ocean through Behring Straits. While it may be possible that sea-going vessels may not be able to ascend the Mackenzie River owing to the shallow water in the Delta at the mouth of that stream, a class of river steamers can be devised which would cheaply serve the district mentioned, the goods being brought to or taken from some point or harbour near the mouth of the Mackenzie River by deep draught sea-going ships, probably steam vessels. It may be that the impediment of the bar at the mouth of the Mackenzie River is such that it can be readily and practically dredged out, enabling sea-going vessels of modern draught, say 16 to 20 feet of draught, to enter the Mackenzie and come up it for many hundreds of miles.

It is probable that next season will see very considerable prospecting done in the district under discussion. It has been suggested that it would be good policy on the part of the Government to send exploration parties to this district, each accompanied by an Assayer, to take topographical surveys and test the minerals which they might come across. Report says that owing to the natural state of the country, through glacial action in the past, the ridges during the season when free from snow, are admirably adapted for thorough exploration in the way of discovering mineral veins. The profitable development of the mining region in that district would mean very much in the way of a market for meats and grains of the North West Territories, which could be forwarded to that point by light and cheaply built railways, it being well known that the condition of the country is such that a railway could be cheaply constructed from points in the Territories already supplied with railroad facilities, to almost any point in the district mentioned.

#### CROW'S NEST PASS RAILWAY.

The road is now completed to Kootenay Lake, and it is anticipated will be handed over to the operating department about the middle of December. The benefit of it in enhancing the value of agricultural produce in the country is yet to be realized; but there is no doubt whatever that it will contribute very greatly in that respect.

#### IMPROVED TIMES.

The country is to be congratulated on the present condition of affairs, and so far as one can foresee, it would appear that such is likely to be of considerable duration.

Respectfully submitted,

WM. PEARCE.

# Department of the Interior.

## No. 3.

DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE INSPECTOR OF AGENCIES,  
WINNIPEG, 31st December, 1898.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to report through you, for the information of the Honourable Minister, on the work of my office for the departmental year of 1897-98.

The year has been marked by a general expansion of business at all the agencies, necessitating in some offices the staff working far beyond the regulation hours. I am glad to be in a position to report that I have found a strong personal interest to have been shown by the agents and under officials, in keeping the work up satisfactorily, and a desire manifested to facilitate, as far as possible, the work of the Immigration branch, and looking after the needs of incoming settlers and affording them every information that would assist in getting them comfortably settled.

The Winnipeg Lands and Timber Agency, which is directly under my charge, has had an unprecedentedly heavy year, the work having been nearly double that of any previous year. Owing to this fact and to certain changes in the personnel of my staff, I found it necessary to devote my time almost exclusively during the day to the work of the Agency, leaving my inspection duties to be done chiefly at night, at my own home.

The heavy strain I was kept under for so long a time at this double work was impairing my health, and it was with much satisfaction I learned of the arrangement which was recently made by which Mr. E. H. Taylor relieves me of the responsibility of a portion of the work at the agency, thus enabling me to give more attention to inspection work.

Owing to pressure of work at Winnipeg, I did not start on my tour of inspection of the agencies until the month of December last, when inspection was made of the Lands and Timber Offices of New Westminster, B.C., under charge of the agents, John McKenzie and James Leamy, respectively, of which you received full reports under dates of 26th February, and 1st March.

It was while on this trip I made an inspection of the business of a number of the saw-mills operating under Dominion licenses in British Columbia, which resulted in my finding large shortages, extending over a number of years, in the returns of sales of timber products on which the Government royalty is based, as well as many cases of under-valuation. These shortages amounted to upwards of three thousand dollars.

The present Crown Timber Agent Mr. James Leamy, succeeded Mr. Higginson, who resigned in February, 1897. Mr. Leamy accompanied me on the above tour and was fully instructed in the method of making inspections, and conducting the other work of his office; and it is expected that for the future a more thorough supervision of the business in this Agency will be exercised.

During the month of September, in the disastrous conflagration which occurred at New Westminster, the Government building was destroyed. Owing to the speed at which the fire travelled, and the intensity of the heat, little time was given for the removal of the office papers and records, of which the greater part was lost. But the most valuable documents and securities, having been kept in the vault, were saved. Steps were at once taken to supply duplicates of the lost records, and it was not long before the offices were again open for business in temporary quarters, so that the public did not suffer any very serious inconvenience.

I made an inspection of the Land Office at Kamloops during the latter part of January. The demand for free grant land in this district and in that of New Westminster, is small, but little business being transacted at either of these Agencies.

A careful inspection was subsequently made of the following agencies, viz.: The office of the Superintendent of the Rocky Mountains Park at Banff, the Lands and Timber Offices at Calgary, Edmonton, Regina, Yorkton, Dauphin and Brandon.

There was found at nearly all these Agencies considerable duplication and unnecessary work being done. Where it was found that the work could be simplified and shortened, instructions were given to that end.

My inspection duties called upon me to scrutinize monthly all expenditure accounts of the agents and travelling staff, and to see that they are in order before being forwarded to Head Office for payment. Generally speaking, the accounts have been found correct and show that reasonable care and economy have been exercised.

## DEPARTMENTAL CHANGES.

The following changes during the year have taken place in connection with the outside staff:—James Leamy, appointed Crown Timber Agent at New Westminster, vice T. S. Higginson, resigned; D. G. McDonald, appointed Assistant Crown Timber Agent and Homestead Inspector, at Kamloops, B.C.; W. C. de Balinhard, transferred from the agency at Yorkton, to that of Brandon, to fill the position made vacant by the superannuation of Mr. W. H. Hiam. The position of Agent at Yorkton was filled by the transfer of Mr. J. M. Sutherland, senior assistant at the Winnipeg Agency; Mr. E. H. Taylor was transferred from the Immigration Office to fill the vacancy caused by the removal of Mr. Sutherland.

Appended will be found a summary of work performed at the respective Agencies, during the Departmental year ended 30th June, 1898.

I have the honour to be, Sir,

Your obedient servant,

E. F. STEPHENSON,

*Inspector of Agencies.*

## SUMMARY of Work Performed at the respective Agencies during the Departmental Year ended 30th June, 1898.

Agency.	Homestead Granted.	Sales Made.	ENTRIES CANCELLED.		ENTRIES and Renewals — Mining Claims Recorded.	Free Miners' Certificates Issued.	Hay Permits Issued.	Timber Permits Issued.	Applications for Homestead Patent Approved.	LETTERS.	
			Homesteads.	Pre-emptions and Sales.						Received.	Sent.
Alameda	177	6	99	48			279	11	62	1,769	1,755
Battleford	1	1					52	46		197	115
Brandon	300	38	142	66	1		501	1,059	385	9,442	9,248
Calgary	123	17	64	11	21	65	362	222	94	3,325	2,882
Dauphin	5 8	7	192	5	5		247	186	168	4,782	3,494
Edmonton	623	12	234	9	27	840	139	385	422	5,034	4,957
Kamloops	41	25	26	5	3	5	1	5	26	1,326	1,410
Lethbridge	195	51	36	8			56	78	46	2,368	1,735
Minnedosa	227	11	98	26			181	243	147	2,549	2,321
New Westminster	13	4	5	1	3			76	8	1,072	989
Prince Albert	143		50	6		66	130	423	42	1,117	1 005
Regina	475	26	135	86			677	118	283	7,030	5,882
Red Deer	108	5	67	8			81	90	120	1,946	1,761
Swift Current	21	4	7	1			25		5	348	582
Winnipeg	333	48	68	132	193	48	728	1,627	172	11,254	9,340
Yorkton	165	2	65	13			136	88	85	2,386	2,214
	3,513	257	1,288	425	253	1,037	3,609	4,657	2,065		

# Department of the Interior.

## No. 4.

### TIMBER, MINERALS, GRAZING AND IRRIGATION.

DEPARTMENT OF THE INTERIOR,

OTTAWA, 10th March, 1899.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior.

SIR,—I have the honour to submit the eighteenth annual report of the Timber and Mines Branch of the Department of the Interior.

The annexed statements, lettered "A" and "B," show that the revenue derived from timber, grazing, hay and mineral lands from 1st of July, 1897, to the 1st of July, 1898, exclusive of sales of mineral lands, amounted to \$828,431.01. The revenue for the previous fiscal year was \$88,309.50. The above amount includes the dues received for timber and hay cut on school lands, and rent of those lands for grazing purposes.

Reports received from the Crown Timber Agents at Winnipeg, Calgary, Edmonton and Prince Albert, showing the revenue collected by them and other information, are appended hereto.

For the sake of reference and comparison, statement lettered "C," showing by fiscal years the revenue received from timber, mineral, grazing and hay lands from the year 1872 up to the 1st of July, 1898, not including sales of mineral lands, has been prepared and will be found at the end of this report.

The statement referred to in the preceding paragraph does not include the revenue from school lands, but statement lettered "B," appended hereto, shows the revenue from this source for the fiscal year 1897-98, and the statement lettered "D" shows the total revenue up to the 30th June, 1898.

The total revenue of the Winnipeg Agency for the fiscal year 1897-98 was \$35,191.59.

The price of lumber within the Winnipeg Agency was from \$12 to \$15.50 per thousand feet B.M. There are 29 mills in operation within the agency cutting timber under Government license.

The revenue received from the British Columbia Agency during the fiscal year 1897-98 was \$21,081.26.

Timber sold at the rate of \$7 to \$8 per thousand feet B.M.

There are 22 mills within this agency operating under license from the Dominion Government.

The total amount of dues collected within the Calgary Agency during the fiscal year 1897-98 amounted to \$12,130.91.

The price of lumber at Calgary was \$8 to \$16, and at Macleod, \$7 to \$16.

Several saw-mills were operating within the agency last year under Government license.

The total amount of dues collected within the Edmonton Agency during the fiscal year amounted to \$12,954.95.

The price of lumber during the year was \$10 to \$12 per thousand feet B.M.

There are six saw-mills in operation within this agency.

The total amount of dues collected within the Prince Albert Agency during the year amounted to \$5,798.30.

Lumber sold at Prince Albert from \$15 to \$17.50 per thousand feet B.M. There are two saw-mills in this agency cutting timber under license.

Saw-mill returns received at this Department give the following quantities of building material as having been manufactured and sold during the year within the five agencies :—

	Manufactured.	Sold.
Sawn lumber . . . . .	39,096,407 feet.	35,954,591 feet.
Shingles . . . . .	1,584,500 "	2,215,563 "
Laths . . . . .	24,200 "	24,650 "

One hundred and thirty-five licenses to cut timber over a total area of 2,355.75 square miles were prepared. The areas licensed in the province of Manitoba, the three provisional territorial districts and on Dominion lands in the province of British Columbia, are as follows :—

	Square Miles.
Manitoba . . . . .	659.84
Alberta . . . . .	1134.74
Assiniboia . . . . .	
Saskatchewan . . . . .	256.54
British Columbia . . . . .	304.63

The number of applications received during the year to cut timber was 336. The number of berths granted was 82.

Within the past year 37 berths were cancelled or relinquished by the owners thereof.

The number of berths under license and permit in the province of Manitoba and the Territories is 306, and on Dominion lands in the province of British Columbia, 166. In the Yukon Territory 51 berths have been granted covering a total area of 201½ square miles.

## Department of the Interior.

The following statements show the timber limits either licensed or authorized to be licensed within the several Crown timber agencies:—

### WINNIPEG AGENCY.

Limit.	License.	Name.	Locality.	Area.
				Sq. Miles.
1	Lease 10	D. E. Sprague	Rosseau and Pine Rivers	5 20
2	"	"	"	4 30
40 or L. 6	6	J. D. McArthur	Bird-Tail Creek	13
14	90	C. Bartlett	Shell River	50
15a	91	"	"	11 25
15	91	"	"	38 75
16	21	D. Ross	Near Whitemouth River	120
23	92	C. Bartlett	Shell River	50
25a	233	"	"	25
25	233	"	"	25
26a	122	H. B. Mitchell	"	5 17
26b	122	"	"	3
26d	Not issued	"	Near Sand River	9 63
26	122	"	Shell River	4
27a	140	H. B. Webb	"	11 50
27b	140	"	"	3 75
27	140	"	"	5 06
28a	140	"	"	1
28	140	"	"	25 75
48	112	J. A. Christie	Little Boggy Creek	33 50
92	Not issued	M. K. Dickinson	Little Swan River	50
356	"	V. B. Wadsworth	Red Deer River	50
544	113	Wm. Robinson	Bad Throat River	5 60
546	Not issued	Imperial Bank of Canada	"	49 14
551D	173	Chas. Geikie	Tp. 23, R. 19, W. 1st M.	18
554	124	D. E. Sprague	Two islands in Whitemouth Lake	2
567, No. 1	196	P. McArthur	Fairford River	2 69
567 " 3	196	"	"	8
567 " 4	196	"	"	13 40
567 " 5	196	"	"	17 10
567 " 6	196	"	"	17 82
568	Not issued	T. T. W. Bready	Tp. 18, R. 7, E. P. M.	16 88
571	"	Jas. Shaw	Tps. 25-26, R. 25, W. P. M.	40
575	220	Dauphin Lumber Co.	Tps. 22-23, R. 20, W. P. M.	18
578	265	D. H. Harrison	Tp. 23, R. 18, W. P. M.	14
580	Not issued	H. B. Mitchell	Black Bear Island	3
581	178	J. A. Christie	"	16
587	Not issued	David Ross	Whitemouth River	16
592	174	Geo. W. Erb	Tp. 18, R. 3, E. P. M.	4 50
603	201	Thomas & Co.	"	2
613	207	I. & H. McCorquodale	Tp. 2, R. 20-21, W. P. M.	2
615	217	F. A. Fairchild	Tps. 18-19, R. 19, Tp. 19, R. 20, W. P. M.	7 93
618	Not issued	J. A. Christie	Tps. 21 22, R. 21, W. P. M.	6
621	"	Wm. Robinson	Bad Throat River	16 51
624, No. 1	237	D. E. Sprague	Between Lake of the Woods and Whitemouth Lake	5
624 " 2	237	"	"	22 75
624 " 3	237	"	"	1 60
624 " 4	237	"	"	3
624 " 5	237	"	"	3
625	212	Frank L. Engman	Tp. 18, R. 17, W. P. M.	1 50
662	Not issued	J. A. Christie	Tp. 21, R. 21, W. P. M.	2
670	"	"	"	1
676	263	Frank L. Engman	Tp. 19, R. 18, W. P. M.	2 50
702	Not issued	H. B. Mitchell	Lake Winnipeg	2
703	255	Isaac Riley	"	3
704	243	W. J. Manning	Tp. 19, R. 1, E.	9
705	242	John D. McArthur	Tp. 21, R. 27, W. P. M.	1
716	Not issued	Wm. Robinson	Black River	11 50
733	"	Mackenzie, Mann & Co.	Shoal River	7 30
734	"	"	Swan Lake	10
735	"	"	"	9
736	"	"	"	10
737	"	"	"	8 80



WINNIPEG AGENCY—*Concluded.*

Limit.	License.	Name.	Locality.	Area.
				Sq. Miles.
741	251	The Fairchild Co.	Tp. 19, R. 20, W. P. M.	2
742	248	J. D. McArthur	Tp. 30, R. 30, W. P. M.	6·24
745	252	Wm. Robinson	Bad Throat River	8
751	Not issued	J. D. McArthur	Tp. 30, R. 30, W. P. M.	6
752	256	"	Tp. 20, R. 22, W. P. M.	6
754	249	S. T. Thomas	Tp. 18, R. 3, E. P. M.	1
756	Not issued	Wm. Robinson	On west side Lake Winnipeg	4·50
759	"	H. B. Mitchell	Lake Winnipeg	50
768	"	Reimer & Loewen	Tp. 5, R. 9, E. P. M.	2
785	"	I. Riley	West side of Lake Winnipeg	1
786	"	J. A. Christie	Tps. 21-22, R. 21, W. 1st M.	5·75
790	"	J. Dubruil	Tp. 5, R. 8, E. P. M.	29
796	259	K. Finsson	Tp. 23, R. 3, E. P. M.	1·50
814	Not issued	T. A. Burrows	Tps. 31-32-33, R. 22, W. P. M.	15
815	"	Jas. Drake	On east side Lake Winnipeg	4
823	"	Mackenzie, Mann & Co.	"	50
824	"	"	"	15
825	"	T. L. Morton	Tp. 22, R. 18, W. P. M.	36
826	"	Wm. Peden	Tp. 20, R. 24, W. P. M.	1
		Total		1,198·47

CALGARY AGENCY.

34		30	Jas. Walker	Bow River	42·29
36	No. 1	99	Peter McLaren	S. Fork of Old Man River	3·00
36	" 2	99	"	"	5·25
36	" 3	99	"	"	5·48
36	" 4	99	"	"	3·75
36	" 5	99	"	"	10·00
36	" 6	99	"	"	2·80
36	" 7	99	"	"	7·40
36	" 8	99	"	"	1·20
36	" 9	99	"	"	1·44
36	" 10	99	"	"	5·67
36	" 11	99	"	"	3·90
36a	" 1	117	"	Middle Fork of Old Man River	28·13
36a	" 2	117	"	"	8·25
6a	" 3	117	"	"	8·75
36a	" 4	117	"	"	2·73
6a	" 5	117	"	"	2·25
	80	45	North-west Coal and Navigation Co.	Near South Fork Old Man River	50·00
	105	39	Alberta Lumber Co.	Red Deer River	47·00
	106	36	"	"	47·75
	179	86	Peter McLaren	Middle Fork of Old Man River	50·00
	185	37	Alberta Lumber Co.	Red Deer River	48·75
	186	38	"	"	47·70
	*199	46	"	S. S. Clearwater Lake	51·24
	*200	46	"	"	50·21
	*203	46	"	"	50·40
	*204	46	"	"	49·91
	*242	46	"	"	50·04
	252	115	Peter McLaren	Red Deer River	17·70
	253	114	"	"	11·76
	292	183	Chas. Beck	North Fork High River	47·08
	318E	88	Eau Claire and Bow River Lumber Co.	Bow River	16·50
	318F	88	"	"	16·00
	318H	88	"	"	6·00
	318I	88	"	"	4·00
	318J	88	"	"	5·63
	417K	88	"	"	7·50
	*425	50	Alberta Lumber Co.	S. S. Clearwater Lake	35·25

\*Limit formerly situated within the Edmonton Agency.

# Department of the Interior.

## CALGARY AGENCY—Concluded.

Limit.	License.	Name.	Locality.	Area. Sq. miles.
455	Not issued.	P. McLaren	Red Deer River	48 93
468	111	Jas. Quinn	Little Red River	50 00
552	Not issued.	La Corporation Episcopale Catholique Romaine de St. Albert and Mgr. Goupart	Cascade River	5 00
559	128	D. Morrison	Near S. F. of Sheep River	3 41
569	170	J. Lineham	S. Fork, Sheep River	21 33
573	Not issued.	Dept. of Indian Affairs	Tp. 9, R. 3, W. 4th M.	11 35
579	213	Wm. D. Lineham	North Fork High River	33 33
582	Not issued.	Dept. of Indian Affairs	Belly River	6 50
583	143	Wm. Sharpe	T. 1, Rgs. 27, 28 W. 4th M.	4 00
593	Not issued.	M. S. Cross	Vicinity of Pincher Creek	7 00
594	190	John Lineham	S. Fork Sheep River	6 13
606	Not issued.	A. W. Gillingham	N. Fork Old Man River	3 00
755	"	Chas. Billings	Tp. 24, R. 5, W. 5th M.	1 00
784	250	Wm. Smibert	Tp. 8, Rge. 3, W. 4th M.	1 00
Total				1,047 69

## PRINCE ALBERT AGENCY.

9 Block 1	Lease 15	Geo. Burn	Red River	6 00
9 " 2	"	"	"	6 04
9 " 3	"	"	"	1 87
66 or "A"	33	"	Near Junction Rabbit Creek	47 83
245	49	"	Little Red River	50 00
320	80	"	Fox and Upper Rabbit Creek	50 00
474	79	"	Sandy Lake	50 00
563	Not issued.	Pas Band of Indians	West end Salt Channel	0 39
564	"	D. Shannon	Little Red River	0 25
598	192	Jas. Sanderson	Tp. 52, R. 1, W. 3rd M.	6 00
616	225	Geo. Burn	Stony Lake	35 00
616 A	225	"	"	3 59
633	230	Jas. Sanderson	Tps. 51-52, R. 1, W. 3rd M.	4 12
691	Lease 15	Geo. Burn	District of Saskatchewan	10 19
698	Not issued.	"	Tp. 23, R. 4, W. 3rd M.	5 00
708	"	S. McLeod	Stony Creek	2 30
710	"	"	Near Sandy Lake	49 00
729	"	Jas. Sanderson	Tps. 52, Rgs. 1 and 2, W. 3rd M.	9 00
801	"	H. Keith & Co.	Stony Creek	1 00
802	"	"	"	3 55
Total				341 13

## EDMONTON AGENCY.

9 Block 5	Lease 15	Geo. Burn	Red River	8 55
9 " 6	"	"	"	17 50
302	83	"	N. Saskatchewan River	3 75
496	87	"	"	50 00
627	231	Fraser & Co.	Tps. 49-50, R. 5, W. 5th M.	8 24
631	229	D. Wm. McKenzie	Tp. 42, R. 25, W. 4th M.	0 25
653	223	Walter & Humberstone	Tps. 51, Rgs. 26 and 25, W. 4th M.	4 25
646	Not issued.	D. R. Fraser	Tp. 50, R. 4, W. 4th M.	5 00
674	261	P. Ottewell & Co.	District of Alberta	9 00
679	Not issued.	Geo. I. Clink	Tp. 48, R. 23, W. 4th M.	2 00
727	"	John Hall	Tp. 57, R. 24, W. 4th M.	0 50
787	266	Hudson Bay Co.	Athabasca River	1 00
788	Not issued.	D. R. Fraser	Tp. 52, Rge. 4, W. 5th M.	4 00
799	"	Walter & Humberstone	In vicinity of Tp. 52, Rge. 4, 5th M.	2 80
800	258	G. I. Clink	Tp. 41, R. 1, W. 5th M.	0 50
811	269	Leo. E. Benz	Tp. 47, Rge. 24, W. 4th M.	0 50
Total				117 84

NEW WESTMINSTER AGENCY.

Limit.	License.	Name.	Locality.	Area.
Aa, Ab	119	Yorkshire Guarantee & Securities Corporation (Ltd.)	South of Cheam Indian Reserve.	680 acres
B	102	British Columbia Mill, Timber & Trading Co.	Tp. 7, Lot 362, G. 1, New West.	3,480 "
H	108	"	Tp. 2, Lot 33, Bk. 5, R. 2, W. 6th M.	960 "
K	107	Grant & Kerr	Tp. 2, Dist. New West.	360 "
L	109	British Columbia Mill, Timber & Trading Co.	Tp. 7, New West.	640 "
M	159	Grant & Kerr	Stave River.	541 "
O	184	British Columbia Mill, Timber & Trading Co.	Tp. 39 North, Dist. New West.	960 "
Q	141	Grant & Kerr	Tp. 1, Dist. New West.	640 "
R	120	The British Columbia Timber & Electric Co.	Tps. 2, Rgs. 1 & 2, Dist. New West.	2,720 "
W	138	Dobbie, Davidson & Strathy	Tps. 4, 2, 12, Dist. New West.	10,704 "
X	197	Thos. L. Briggs	Tp. 15, East of Coast M.	4,800 "
Y No. 1.	182	Mossom Boyd Co.	Upper and Lower Lillooet Lakes.	3 20 sq.m
Y. No. 2	182	"	"	2 50 "
Z No. 1	154	Davidson, Henderson & Strathy	Tp. 15, East of Coast M.	7 22 "
Z No. 2	154	"	"	5 75 "
3	103	W. C. Wells	Kicking Horse River	2 00 "
5	134	J. B. & T. S. Rielly	Kicking Horse River and Beaver Creek.	10 00 "
14	204	Columbia River Lumber Co.	Columbia River.	49 23 "
15	204	"	"	42 30 "
16	200	Jas. W. Bryson	"	15 55 "
17	241	S. Barber and M. Carlin	"	16 50 "
18	Not issued.	John Dill	"	50 00 "
19	"	Columbia River Lumber Co.	"	25 00 "
20	142	T. & J. Long	Blue Water River	34 55 "
27	130	Columbia River Lumber Co.	"	1 00 "
29	202	W. C. Wells	Tp. 25, R. 19, W. 5th M.	13 16 "
30	257	Columbia River Lumber Co.	Columbia River	4 40 "
32	Not issued.	Geo. Goodwin	Illecillewaet River.	640 acres
33 No. 1	146	Brunette Saw Mill Co.	Stave River and Stave Lake	1,024 "
33 No. 2	146	"	"	2,803 20 "
33 No. 3	146	"	"	342 "
33 No. 4	146	"	"	155 "
36	123	Thos. W. Patterson	Tp. 39, G. 1, Dist. New West.	1,371 20 "
38	169	Wm. Caldwell	Coquitlam and Gold Creek.	14 50 sq.m
40 No. 1	Not issued.	Columbia River Lumber Co.	Stony Creek	6 25 "
40 No. 2	"	"	"	4 00 "
42	177	"	Columbia River	8 50 "
43	162	E. A. Willmott & Co	Tps. 4 and 5, R. 28, W. 6th M.	1,685 acres
44 No. 1	167	Brunette Saw Mill Co.	Bks. 12, 3, 4, Province British C.	396 70 "
44 No. 2	167	"	"	650 "
44 No. 3	167	"	"	500 "
44 No. 4	167	"	"	659 81 "
44 No. 5	221	"	Lillooet River	160 "
47	205	Columbia River Lumber Co.	Blackwater Creek	22 66 "
48 No. 1	Not issued.	Confederation Life Association.	Near James Lake	} 3,520 "
48 No. 2	"	"	"	
48 No. 3	"	"	"	
49	133	Stein & Robinson	Tp. 23, R. 2, W. 6th M.	560 "
50c	155	McLaren & Ross	Chilliwack River	10 50 sq.m
51	Not issued.	Grant & Kerr	Tp. 2, G. 2, N. West. Dist.	120 acres
52	157	G. A. Booth	Tp. 39, New West. Dist.	876 30 "
55	Not issued.	Ross & McLaren	Tps. 19, 22, 25, East Coast M.	15,900 "
57	150	Huntingdon Lumber Co.	Tp. 16, Dist. N. West	1,920 "
58	137	Thos. W. Patterson	Tp. 39, Dist. N. West.	480 "
61	153	Yorkshire Guarantee & Securities Corporation (Ltd.)	Tps. 2 and 3, R. 29, W. 6th M.	130 33 "
63 No. 1	194	Jos. Martin & Sons	Harrison Lake	960 64 "
64	187	Shuswap Milling Co.	Illecillewaet River.	947 20 "
65	Not issued.	Columbia River Lumber Co.	Wait-a-bit Creek	27 sq.m
66	180	"	Sec. 24, Tp. 20, R. 10, W. 6th M.	542 acres
67	Not issued.	Chas. H. Carriere	Hospital Creek.	960 "
69	149	Pacific Coast Lumber Co.	Tp. 39, W. Coast M.	354 "
70	Not issued.	Columbia River Lumber Co.	Columbia River	50 sq.m
71	163	Genelle Bros.	Tps. 22, Rgs. 10, 11, W. 6th M.	2,560 acres

# Department of the Interior.

## NEW WESTMINSTER AGENCY—*Concluded.*

Limit.	License.	Name.	Locality.	Area.
72	186	Genelle Bros.	Salmon Arm of Shuswap Lake.	4 79 sq.m
73	Not issued.	Columbia River Lumber Co.	Columbia River.	18 "
74	"	"	"	27 "
77	148	T. J. Hammill.	Tp. 39, Dist. New West.	348 acres
78	165	Genelle Bros.	Tp. 21, R. 10, W. 6th M.	2,118 "
79	198	T. L. Briggs.	Tps. 3, 4, Rgs. 3, 4, W. 7th M.	2,240 "
80	172	T. J. Hammill.	Tp. 4, R. 4, W. 6th M.	149 "
81	Not issued.	Huntingdon Lumber Co.	Tp. 16, New West.	960 "
83A	"	McLaren Ross Lumber Co.	Railway Belt, B. C.	362 "
83B	"	"	"	680 "
85	"	S. Barber.	Columbia River.	79 sq.m
86	"	Royal City Planing Mill Co.	New West. District.	420 acres
87	262	"	Tps. 2 and 38, R. 1, W.	640 "
88	185	Genelle Bros.	Columbia River.	4 22 sq.m
89	Not issued.	S. Barber.	"	3 "
91	191	Martin Bros.	Tributary Harrison L.	1 "
94	210	Thos. W. Patterson.	Tp. 39, W. Coast M.	480 acres
96	188	E. H. Heaps & Co.	Stave River.	640 "
98	Not issued.	Royal City Planing Mill Co.	Near Stave Lake.	400 "
99	"	"	Tp. 41, New West. Dist.	1 25 sq.m
101	198	T. L. Briggs.	Tps. 3, 4, W. 7th M.	160 acres
103	189	H. West.	Stave River.	163 "
105	Not issued.	Columbia River Lumber Co.	Columbia River.	6 sq.m
106	"	H. R. Stephen.	Stave River.	3,450 acres
110	"	Thos. W. Patterson.	Tp. 39, Dist. New West.	384 "
111	211	"	"	640 "
112	Not issued.	Fred. Robinson.	Columbia River.	3 sq.m
113	"	"	"	3 "
114	"	Genelle Bros.	"	9 "
116	"	Fred. Robinson.	Beaver River.	4 "
117	"	"	"	4 "
118	"	"	Columbia River.	9 "
119	219	Jos. Genelle.	Salmon Arm of Shuswap Lake.	393 acres
123	268	Fred. Robinson.	Tp. 23, R. 2, W. 6th M.	240 "
125	Not issued.	Brunette Saw Mill Co.	Near Burrard Inlet.	530 "
127	"	Genelle Bros.	Columbia River.	1,920 "
128	"	"	"	640 "
129	"	Peter Genelle & Co.	Tp. 22, R. 10, W. 6th M.	2,120 "
134	239	Peter Genelle & Co.	Tp. 22, R. 10, W. 6th M.	176 acres
136	246	Geo. Finney.	Adjacent to Bonaparte Indian Reserve.	873 60 "
138	Not issued.	J. W. McRae.	Tp. 18, E. of Coast M.	985 "
139	"	Jos. Genelle.	Tps. 22 & 23, R. 11 & Tp. 23, R. 10, W. 6th M.	1,120 "
140	"	"	Tp. 24, R. 8, W. 5th M.	960 "
141	"	"	Tps. 21 & 22, E. 8, W. 6th M.	960 "
144	"	Arthur Tretheway.	Harrison Lake.	216 "
145	"	Jas. Tretheway.	"	216 "
148	253	Canadian Co-operative Society.	Stave Lake.	329 "
150	Not issued.	E. H. Heaps & Co.	"	320 "
152	"	Kootenay Lumber Co.	Fish River & Coyd Creek.	1,920 "
153	"	"	"	320 "
154	"	"	"	320 "
155	"	"	"	640 "
158	"	Albert McLaren.	Chilluweyuk River.	440 "
159	"	"	"	600 "
160	"	"	"	720 "
161	"	"	"	560 "
162	"	"	"	440 "
163	"	"	"	320 "
164	247	Geo. Finney.	Tp. 21, R. 26, W. 6th M.	80 "
171	260	Shuswap Milling Co.	Tp. 20, R. 13, W. 6th M.	1 sq.m
173	Not issued.	J. & A. Tretheway.	Tp. 2, R. 29, W. 6th M.	90 acres
176	264	British Columbia Mills Timber and Trading Co.	Tp. 1, W. of the Coast M.	480 "
177	Not issued.	J. G. Scott.	Coquhalla River.	1,500 "
185	"	E. H. Heaps & Co.	Tps. 4, Ranges 2 & 3, W. 7th M.	1,270 "
186	"	Peter Genelle & Co.	Columbia River.	480 "
Total area.				763 09 sq.m

## YUKON TERRITORY.

T. B. No.	Name.	Locality.	Area. Sq. m.
1	A. S. Cross	At the junction of the Lewes River with the Teslin River.	5 00
2	A. McLean	At the junction of McClintock Creek with Lake Marsh.	5 00
3	E. Vachon	At the junction of the Pelly and Yukon Rivers.	5 00
4	G. S. McConnell	At the junction of the Lewes River with the Teslin River.	5 00
5	The Klondike Mining, Trading and Transportation Co.	On east side of Teslin Lake.	5 00
6	J. I. Johnson	On west side of Lewes River, at its junction with Lake Labarge.	5 00
7	H. Domville	On east side of Lewes River, at its junction with Lake Labarge.	5 00
8	J. R. Perry	Windy Arm, Tagish Lake.	5 00
9	A. S. Kerry	" "	5 00
10	Jas. Christie	On a creek tributary of Lake Labarge.	5 00
11	North American Transportation Co.	Klondike River	5 00
12	The Canadian Yukon Lumber Co.	On a creek tributary of the White River.	5 00
13	The Central New York Manufacturing and Trading Co.	At the mouth of Sixty Mile River.	1 00
14	The Canadian Yukon Lumber Co.	On a creek tributary of Lake Labarge.	5 00
15	" "	" " " the Stewart River.	5 00
16	" "	" " " on east side of the Yukon River.	5 00
17	" "	" " " tributary of the Stewart River.	5 00
18	" "	" " " " "	5 00
19	" "	" " " " "	5 00
20	" "	At the mouth of Big Salmon River.	5 00
21	" "	On a creek tributary of the White River.	5 00
22	A. F. Philp	On west side of Taku Arm, Tagish Lake.	5 00
23	The Canadian Yukon Lumber Co.	On a creek tributary of the Lewes River.	5 00
24	The Kerry Canadian Mill Co.	On east side of Tagish Lake.	2 50
25	F. Slavin & J. W. Boyle	Klondike River.	5 00
26	" "	" "	5 00
27	Richard Davenport	On left bank of the Yukon River.	1 00
28	E. A. Christenson	On Lewes River, near Five Finger Rapids.	1 00
29	The Arctic Saw Mill Co.	" "	5 00
30	F. Swanson	" "	1 00
31	J. F. Burke	" "	1 00
32	The Yukon Saw Mill Co.	" "	5 00
33	J. J. Heney & Wm. Stewart	Yukon River and Indian River.	6 00
34	Wm. V. Burrill	On a creek tributary of West Arm of Lake Bennett.	3 00
35	Wm. Murdock & Thos. Smith	On Windy Arm of Tagish Lake.	1 00
36	The Canadian Yukon Lumber Co.	On a creek tributary of Lake Labarge.	5 00
37	" "	On south side of the Stewart River.	4 00
38	" "	On a creek tributary of Lake Bennett.	5 00
39	" "	On north side of the Stewart River.	5 00
40	Jas. Christie	At the mouth of Tutshi Creek, Taku Arm, Lake Tagish.	5 00
41	F. M. Rattenbury	On a creek tributary of Teslin River.	5 00
42	" "	" " Lake Bennett.	5 00
43	A. A. McRae	Stewart River	1 00
44	D. G. Stewart	Bonanza Creek	2 00
45	J. D. Trenholme	" "	1 00
46	Jas. A. Ritchie	" "	1 00
47	C. E. Miller	Klondike River.	5 00
48	D. A. Matheson	" "	1 00
49	H. Maitland Kersey	" "	3 00
50	C. A. Macomber	On Indian River.	1 00
51	Harper & Ladue	" "	5 00
Total area			201 50

## Department of the Interior.

### TIMBER ON DOMINION LANDS IN MANITOBA, THE NORTH-WEST TERRITORIES, AND WITHIN THE RAILWAY BELT IN THE PROVINCE OF BRITISH COLUMBIA.

#### *Licenses.*

A license to cut timber can be acquired only at public competition. A rental of \$5 per square mile is charged for all timber berths excepting those situated west of Eagle Pass in the province of British Columbia, for which the rental is at the rate of 5 cents per acre per annum.

In addition to the rental dues at the following rates are charged :—

Sawn lumber, 50 cents per thousand feet B.M.

Railway ties, six and eight feet long,  $1\frac{1}{2}$  and  $1\frac{3}{4}$  cents each.

Shingle bolts, 25 cents a cord.

All other products, 5 per cent on the sales.

A license is issued as soon as a berth is granted, but in unsurveyed territory no timber can be cut on the berth until the licensee has made a survey thereof.

#### *Permits.*

Permits to cut timber are also granted at public competition, except in the case of actual settlers who require the timber for their own use.

Settlers and others may also obtain permits to cut up to 100 cords of wood for sale without competition.

The dues payable under a permit are from \$2 to \$3 per thousand feet B.M., for square timber ; from  $\frac{1}{2}$  to  $1\frac{1}{2}$  cents per lineal foot for building logs ; from  $12\frac{1}{2}$  to 25 cents per cord for wood ; 1 cent for fence posts ; 3 cents for railway ties, and 20 cents per thousand for shingles.

Homesteaders having no timber of their own are entitled to a permit free of dues to cut the following quantities :—

3,000 lineal feet of building logs, not to exceed 12 inches at butt end, equal to 6,750 feet B.M of sawn lumber. If the timber is cut from dry trees 3,000 lineal feet of any diameter may be taken.

400 roof poles.

500 fence posts.

2,000 fence rails.

Homesteaders and all *bona fide* settlers whose farms may not have thereon a supply of timber, or who are not in possession of wood lots or other timbered lands, will be granted a free permit to take and cut dry timber for their own use on their farms for fuel and fencing.

A permit fee of 25 cents in each case is charged.

### YUKON TERRITORY.

#### *Licenses.*

A license to cut timber on an area not exceeding five square miles in the above territory may be granted to the first applicant therefor upon payment of a bonus of not less than \$250 per square mile, but not more than five such berths will be granted to one individual or company.

The licensee shall cause a survey to be made of the berth and shall erect a saw-mill in connection therewith within a certain period to be fixed by the Minister of the Interior, and shall pay a stumpage of \$2 per thousand feet B.M. on the timber cut.

#### *Permits.*

Permits to cut cord-wood and ties in the Yukon Territory may be obtained from the Crown Timber Agent upon payment of a fee of \$5, and dues at the rate of 50 cents a cord for the former and 6 cents each for the latter.

## MINING LANDS OTHER THAN COAL.

During the past fiscal year 247 entries were granted by the agents of Dominion Lands in Manitoba and the North-West Territories. In the Yukon Territory 9,134 placer claims, and 276 quartz claims were recorded up to the 1st July, 1898. The returns received since that date show that between the 1st of July last and the 31st of December, 1898, 4,570 entries for placer claims and 177 entries for quartz claims have been granted.

The revenue collected from this source up to the 1st of July, 1898, was \$188,360.94, and from that date to 31st December, 1898, \$110,136.

22,678 Free Miner's Certificates have been issued to 1st March, 1899, producing a revenue of \$226,888.

The following is a list of the agents of the Government who were authorized to issue certificates and the number issued by each agent:—

High Commissioner, London, England	4
Immigration Agent, Liverpool, England	22
do do Glasgow, Scotland	6
do do Dublin, Ireland	
Gold Commissioner, Dawson City	9,866
Interior Department, Ottawa	154
Collector of Customs, Victoria	5,933
do do Vancouver	3,081
do do Toronto	27
do do Montreal	86
do do Nanaino, B.C.	430
do do Ashcroft	41
do do Rossland	2
do do Stikine River	
do do White River	
do do Chilkoot Pass	
do do Glenora	95
Agent of Dominion Lands, Winnipeg	115
do do Edmonton	847
do do Calgary	71
do do Prince Albert	66
do do New Westminster	13
do do Kamloops	6
do do Dauphin	1
Officer N. W. M. Police, Tagish Lake	1,728
do do Dalton Trail	61
do do Lake Bennett	8
do do Fort Selkirk	
do do Fort Saskatchewan	
P. H. Austin, Rat Portage	16

## DREDGING.

Leases have been issued to dredge for minerals other than coal in the submerged beds of rivers in the Yukon Territory covering 1,353 miles, and for the same purpose in the North-West Territories covering 907 miles.

## Department of the Interior.

SCHEDULE of Individuals and Companies who have secured dredging leases on certain streams in the Yukon District.

Name of Lessee.	Stream.	Number of Miles.	Name of Lessee.	Stream.	Number of Miles.
J. J. O'Connell	Teslin River	10 00	J. Weir	Stewart River	30 00
M. E. O'Connell	"	10 00	P. C. Mitchell	"	20 00
J. A. Mercier	"	10 00	A. E. Philp	Klondike River	20 00
F. Mercier	Little Salmon River	10 00	W. L. Parrish	Teslin River	10 00
P. E. Mercier	Pelly River	10 00	The Klondike, Yukon		
H. Mercier	"	10 00	& Copper River Co.	Indian River	10 00
Corinne Betournay	Macmillan River	30 00	Harry Vrooman	Yukon River	10 00
A. Turcotte	Lewes River	30 00	Geo. P. Brophy	Macmillan River	5 00
J. A. Mercier, jr.	Stewart River	20 00	C. M. Wiggins	Indian River	30 00
E. O'Connell	"	10 00	F. B. Vrooman	Klondike River	5 00
J. A. Mercier	Hunker Creek	5 00	Geo. H. Rogers	Teslin River	30 00
Mai Mercier	Gold Creek	5 00	A. M. Wiley	Pelly River	5 00
F. Mercier	Sixty Mile River	10 00	A. M. Wiley	Little Salmon River	5 00
P. E. Mercier	"	10 00	A. M. Wiley	Ladue Creek	5 00
H. Mercier	"	10 00	A. M. Wiley	McQuesten River	5 00
J. A. Mercier	Indian River	10 00	A. M. Wiley	Chandindu River	5 00
M. E. O'Connell	"	10 00	Norman McLean	Dominion River	5 00
J. J. O'Connell	"	10 00	Edmund Guerin	Yukon River	25 00
J. A. Mercier, jr.	Klondike River	10 00	Mary Ellen Guerin	"	25 00
P. E. Mercier	"	10 00	M. Guerin	"	20 00
F. X. Mercier	"	10 00	Julia Maguire	Stream heading in	
A. Mercier	Big Salmon River	30 00		Mayolake & empty-	
Thos. A. Watterson	Pelly River	30 00		ing in Stewart Riv.	30 00
Horatio G. Houghton	Sixty Mile River	30 00	C. R. Griggs	Stewart River	30 00
Alex. Simpson	Henderson Creek	5 00	P. Whelan	Macmillan River	5 00
Edward Patterson	Macmillan River	30 00	W. Y. Soper	"	5 00
Arthur W. Ault	McQuesten River	30 00	Thos. Ahearn	"	5 00
John A. McPherson	Lewes River	30 00	D. Fraser	"	5 00
A. M. Wiley	Klondike River	5 00	Geo. Goodwin	"	5 00
Mathew Mulvin	"	5 00	J. W. McRae	"	5 00
Geo. Edwards	Stewart River	10 00	S. H. Fleming	"	5 00
Geo. Edwards	Teslin River	10 00	G. E. Keith	Bear Creek	5 00
Geo. Edwards	McQuesten River	10 00	Arthur Ross	Lewes River	5 00
Michael Connelly	Klondike River	5 00	The Yukon Co. of		
P. H. Gillmour	Indian River	10 00	Montreal	Macmillan River	30 00
P. H. Gillmour	Yukon River	10 00	Arthur Ross	Pelly River	10 00
Michael Guerin	Klondike River	5 00	C. M. Thompson	"	5 00
Jas. J. Guerin	"	5 00	W. H. Wymann	Lewes River	5 00
J. M. Guerin	"	5 00	Geo. E. Keith	Stewart River	20 00
F. E. Devlin	"	5 00	F. St. Germain	Lewes River	10 00
Edmund Guerin	"	5 00	Adelard Lanctot	Pelly River	20 00
Jas. J. Guerin	Stewart River	10 00	James Stratton	Yukon River	5 00
M. E. Guerin	"	5 00	Jane Thompson	Lewes River	15 00
A. M. Eastman	Lewes River	10 00	Edmond Bisson	Henderson Creek	10 00
A. M. Eastman	Yukon River	10 00	J. A. Robillard	Lewes River	5 00
A. M. Eastman	Big Salmon River	5 00	H. Beauregard	Macmillan River	10 00
A. M. Eastman	Pelly River	5 00	Frank Burnett	Indian River	10 00
Yukon River & Klondike Dredging Co.	Forty Mile Creek	23 00	D. S. Keith	Crooked Creek	5 00
F. J. Monroe	Stewart River	30 00	C. M. Thompson	Pelly River	25 00
Jennie E. Smillie	"	30 00	D. R. Bruce	Clear Creek	5 00
Elizabeth Rogers	"	30 00	John M. Guerin	Chandindu Creek	5 00
N. C. Smillie	"	20 00	John M. Guerin	Yukon River	5 00
L. T. Leet	"	30 00	Wm. Pugsley	Nordenskiold River	30 00
N. C. Smillie	Pelly River	10 00	John M. Smith	"	5 00



SCHEDULE of Lessees to dredge for gold in Rivers, &c., in the North-west Territories.

Name of Lessee.	Stream.	Number of Miles.	Name of Lessee.	Stream.	Number of Miles.
G. A. Drolet.....	North Saskatch. Riv.	30	F. E. Gauthier.....	Smoky River.....	5
H. D. Smith.....	Peace River.....	5	W. E. Phin.....	".....	5
Wm. H. Roughsedge.	".....	5	H. A. A. Brault.....	".....	10
Chas. H. Brindley...	".....	5	Hume Blake.....	Little Smoky River..	5
Chas. H. Bower.....	".....	5	A. J. Oliver.....	".....	5
Wm. MacLaren.....	".....	5	Wm. L. Robertson..	Mountain River.....	5
Jas. T. MacLaren....	".....	5	John Jas. Codville..	".....	5
John Love.....	".....	5	John Love.....	".....	5
Wm. Robertson.....	".....	5	E. M. Roughsedge...	Muddy Creek.....	5
Geo. Hillier.....	".....	5	H. N. Ruttan.....	Boundary Creek.....	5
Thomas Black.....	".....	5	Fred. M. O'Meara...	".....	5
G. Ford.....	".....	5	F. C. Robinson.....	".....	5
Jas. A. Green.....	".....	5	Wm. Hume Blake....	Rat Creek.....	5
Geo. F. Cleveland...	".....	5	Chas. R. Tryon.....	".....	5
Alex. S. Robertson..	".....	5	Wm. L. Robertson..	".....	5
Daniel Hoctor.....	".....	5	Wm. H. Roughsedge.	Peace River.....	25
Geo. Black.....	".....	5	N. D. Beck.....	North Saskatchewan	5
Isaac Cowie.....	".....	5	Isaac Cowie.....	".....	5
Fred. W. Klippel....	North Saskatch. Riv.	5	J. A. Mercier.....	".....	25
D. S. Keith.....	".....	5	Ed. C. Emery.....	".....	5
Geo. E. Keith.....	".....	5	Chas. B. Beck.....	".....	5
N. C. Smillie.....	Peace River.....	55	S. R. Benoit.....	".....	15
Jas. Gibbens.....	North Saskatch. Riv.	5	Isaac Cowie.....	".....	20
Jas. M. Douglass....	".....	5	John C. P. Bown....	".....	5
F. A. Osborne.....	".....	5	The Discoverers Fi-		
J. A. McDougall....	".....	5	nance Corporation		
R. Secord.....	".....	5	(Ltd.).....	".....	5½
W. J. Walker.....	".....	5	N. D. Beck.....	Peace River.....	30
J. H. Gritton.....	".....	30	Renaud Lavergne...	Athabasca River....	10
G. A. Drolet.....	".....	30	C. A. Read.....	Slave River.....	10
Arthur E. Hogue....	".....	12	W. M. Andrews.....	".....	10
Michael Guerin.....	".....	5	G. S. Hubbell.....	".....	10
James J. Guerin.....	".....	5	W. Hubbell.....	".....	10
Edmund Guerin.....	".....	5	John F. Haskell....	".....	10
John Maguire Guerin.	".....	5	Chas. H. Bower....	Peace River.....	25
Thomas Guerin.....	".....	5	F. B. Vrooman.....	Smoky River.....	10
Mary E. Guerin.....	".....	5	Klondike, Yukon and		
F. E. Devlin.....	".....	5	Copper Riv. Co....	Peace River.....	10
Edward Kavanagh...	".....	5	D. J. Murphy.....	".....	10
Chas. D. Brindley...	Athabasca River....	10	Harry Vrooman....	".....	10
W. H. Sheppard....	".....	10	Hiram Vrooman....	".....	10
James T. MacLaren..	".....	10	Carl Vrooman.....	".....	20
Wm. MacLaren.....	".....	10	G. M. B. Vrooman...	".....	10
John James Codville.	Muddy Creek.....	5	Julia Vrooman.....	".....	10
Chas. R. Tryon.....	".....	5	John D. Black.....	".....	5
Isaac Cowie.....	Athabasca River....	10	H. P. Vrooman.....	".....	10
E. A. Braithwaite...	".....	10	Hon. John Costigan.	Smoky River and	
Thomas W. Linds....	".....	10	Wapiti River.....		10
Wm. P. Scarfe.....	Smoky River.....	5	W. A. Burns.....	Peace River.....	10
Wm. H. Roughsedge.	".....	5	R. Brown.....	".....	10
W. H. Blake.....	".....	5	E. C. Arnoldi.....	".....	10
A. J. Oliver.....	".....	5	E. A. Braithwaite..	North Saskatch. Riv.	5
Thomas Black.....	".....	5	Charles D. Brindley.	".....	5
Alexander Mackenzie	".....	5	Hon. John Costigan.	Smoky River.....	5

## Department of the Interior.

The total revenue received for one year's rent of the leaseholds in the Yukon Territory up to the 1st July, 1898, was \$133,005.50, and the total revenue up to the same date for one year's rent from the leaseholds in the North-West Territories was \$8,862.71.

The total sum collected for royalty on the gross output of placer claims in the Yukon Territory, after deducting from the annual output of each claim the sum of \$2,500, was \$391,353.81. The following is a statement of the royalty collected and the names of the creeks upon which the claims are situated, from which the gold was taken:—

Bonanza Creek .....	\$146,822 75
Eldorado .....	216,096 34
Bench .....	955 05
Skookum .....	2,652 20
French .....	673 50
Victoria .....	1,176 25
Frenchhill .....	483 00
French Gulch .....	133 90
Hunker .....	17,082 67
Bear .....	4,465 65
Gold Bottom .....	106 00
Dominion .....	706 50
Total royalty collected .....	\$391,353 81

### MINERALS—BRITISH COLUMBIA.

The precious metals within the railway belt in the province of British Columbia are the property of the province, and the base metals are owned by the Government of Canada. All the minerals, however, are administered by the provincial Government under the mining laws of that province. This is in accordance with an arrangement between the Government of Canada and the provincial Government of British Columbia, and ratified by Orders of His Excellency the Governor General in Council dated the 11th and 28th of February, 1890. This agreement may be terminated at any time by either Government. Under this agreement 2,305 acres have been transferred to the provincial Government, and the total amount received therefor was \$11,528.85.

### PETROLEUM.

Under the authority of an Order in Council dated the 6th of August, 1898, the Minister of the Interior is authorized to reserve for an applicant 640 acres of land situated south of the Canadian Pacific Railway in the District of Alberta, to prospect thereon for petroleum, and if oil is found in paying quantities, to sell the land to the applicant at the rate of one dollar per acre, with a provision that a royalty of two and one-half per cent upon the sales of the petroleum be paid to the Crown. Reservations for this purpose have been made for a few applicants who applied for land in Southern Alberta.

### QUARTZ REGULATIONS.

The Quartz Mining Regulations of the 9th of November, 1889, were superseded by the regulations of the 21st March, 1898. The following is a synopsis of the regulations now in force for the disposal of quartz mining claims on Dominion lands in Manitoba, the North-West Territories and in the Yukon Territory:—

Every person 18 years of age and over, but not under, and every joint stock company holding a Free Miner's Certificate, may obtain an entry for a mining location.

A Free Miner's Certificate is granted for one year, and is not transferable. The fee for a Free Miner's Certificate for an individual is \$10; and for a Free Miner's Certifi-

cate to a joint stock company, from \$50 to \$100, according to the nominal capital of the company.

The holder of a Free Miner's Certificate who has discovered mineral in place, may locate a claim not exceeding 1,500 feet long by 1,500 feet wide, by marking it with two legal posts, one at each end, on the line of the lode, or vein, and marking out the line between them. Upon each post shall be marked the name of the claim, the name of the person locating and the date, and the number of feet lying to the right and left of the line.

The claim shall be recorded with the Mining Recorder of the district within which it is situated within 15 days after the location thereof, if located within 10 miles of the office of the Recorder; one additional day shall be allowed for such record for every additional ten miles or fraction thereof. In the event of a claim being more than 100 miles from a Recorder's office, and situated where other claims are being located, the free miners, not less than five in number, may appoint a Free Miner's Recorder; but if the latter fails within three months to notify the nearest Government Mining Recorder of his appointment, the claims which he may have recorded will be cancelled. The fee for recording a claim is \$5.

An expenditure of not less than \$100 per year must be made on the claim, or a like amount paid to the Mining Recorder in lieu thereof. When \$500 has been expended, or paid, in connection with the location, the locator may, upon having a survey thereof made and upon complying with certain other requirements, purchase the land at the rate of \$5 per acre cash, but if the surface rights have already been disposed of, at \$2 per acre.

A location for the mining of iron and mica not exceeding 160 acres in area may be granted, provided that should any Free Miner obtain a location which subsequently is found to contain a valuable mineral deposit other than iron or mica, his right in such deposit shall be restricted to the area prescribed for other minerals, and the remainder of the location shall revert to the Crown.

The patent for a mining location shall reserve to the Crown forever whatever royalty may hereafter be imposed on the sales of the products of all mines therein, and the same royalty shall be collected on the sales which may be made prior to the issue of the patent.

The Minister of the Interior may grant locations for the mining of copper in the Yukon Territory, each location to consist of an area not exceeding one hundred and sixty acres in a square block. The boundary lines of each location shall be due north and south and due east and west, and not more than one area shall be granted to any one person within a district of ten miles. The grant of such location for the mining of copper shall not give to the grantee any rights to any other minerals, except minerals that are combined or mixed with copper or copper ore, but in no case to include free milling gold or silver.

There shall be paid to the Government on the gross output of copper from any such location a royalty to be fixed by the Minister of the Interior, not exceeding five per cent on such gross output.

The Minister of the Interior may make such rules and regulations and impose such conditions for ensuring the development of any such area, and securing the payment of the royalty as he may consider necessary in that behalf.

The fee to be paid to the Gold Commissioner or a Mining Recorder for an entry for a copper mining location of 160 acres shall be twenty dollars, and the same fee shall be charged for each renewal of an entry.

#### PLACER REGULATIONS—YUKON TERRITORY.

The regulations now in force governing placer mining in the Yukon Territory were approved by Order in Council dated 18th January, 1898. The following is a summary of the regulations:—

Claims in this Territory are designated Creek, Gulch, River and Hill claims. They are 250 feet in length measured in the general direction of the creek or river, and from 100 feet to 2,000 feet in width, according to the formation of the ground.

## Department of the Interior.

Claims are marked by two legal posts, one at each end. An entry for a claim must be obtained within ten days if the location is within ten miles of the Mining Recorder's office. One extra day is allowed for every additional ten miles or fraction thereof. In the event of the claim being more than 100 miles from a Recorder's Office, the same rule applies as in the Quartz Mining Regulations for recording the claim.

The person, or company, who obtains an entry for a claim must hold a Free Miner's Certificate. Every alternate ten claims is reserved to the Crown.

The discoverer of a claim is entitled to 500 feet in length. If the party consists of two discoverers, two claims may be granted amounting together to 1,000 feet in length. To each member of a party beyond two in number, a claim of the ordinary size only.

An entry fee of \$15 is charged. A royalty of 10 per cent on the gold mined shall be levied and collected on the gross output of each claim. The sum of \$5,000 will be deducted from the gross annual output of the claim. The holder of a creek, gulch, or river claim may within 60 days after staking out the claim obtain an entry for a hill claim adjoining it for the sum of \$100. This permission is also given to the holder of a creek, gulch or river claim who prior to January, 1898, obtained an entry therefor, provided the hill claim is available at the time an application is made therefor. No miner shall receive a grant of more than one mining claim in a mining district, the boundaries of which shall be defined by the Mining Recorder; but the same miner may also hold a hill claim and any number of claims by purchase, and any number of miners may unite to work their claims in common.

A claim shall be deemed to be abandoned when the same shall have remained unworked for three consecutive working days of 24 hours each, unless sickness or other reasonable cause be shown to the satisfaction of the Mining Recorder.

It shall not only be necessary for a person or company working a quartz or placer claim to hold a Free Miner's Certificate, but every person in his, or its employment shall have a Free Miner's Certificate unexpired.

The following notice was issued by Major J. M. Walsh, the late Commissioner of the Yukon District, who was empowered by the Governor in Council to amend the regulations:—

### COMMISSIONER'S OFFICE.

Owing to the hardships incidental to the prospecting of distant streams such as the upper portion of the Stewart River and its tributaries, the Commissioner of the Yukon District has decided that the limit of four claims to each individual now in force in the Dawson District shall not apply to the Stewart River District, but that any free miner who shall stake, and do legitimate prospecting on any large tributary of the Stewart or McQuesten rivers shall be entitled to entry for one claim on such tributary in addition to a claim on the main river.

It has been further decided by him that the Stewart River and its tributaries, together with the White River and other streams flowing into the Yukon River for a distance of sixty miles up stream from the mouth of the Stewart and down stream to the mouth of the Henderson Creek, comprise the Stewart River District.

That the Dawson District extend from the International Boundary on the north to the Henderson Creek on the south, including the Henderson and its tributaries.

That the Pelly River District extend from the Stewart River District to the Little Salmon River, including the Little Salmon and its tributaries.

That the Hootalinqua River District extend from the Little Salmon River to the northerly boundary of British Columbia.

(Signed) J. M. WALSH,  
*Commissioner, Yukon District.*

YUKON PROVISIONAL DISTRICT, 19th July, 1898.

## PLACER REGULATIONS—MANITOBA AND NORTH-WEST TERRITORIES.

The following is a summary of the Placer Mining Regulations for Manitoba and the North-West Territories :—

Placer claims generally are 100 feet square, and an entry fee of \$5 is charged. The entry must be renewed each year. On the North Saskatchewan river claims are either Bar or Bench, the former being 100 feet long and extending from high to low water mark. The latter includes bar diggings, but extends back from high water mark to the base of the hill or bank, but not exceeding one thousand feet. Where steam power is used, claims 200 feet wide may be obtained.

## REGULATIONS RE DREDGING, YUKON TERRITORY.

Regulations governing the issue of leases to dredge for minerals in the beds of rivers in the Yukon Territory were approved by Order in Council of the 18th of January, 1898. The following is a summary thereof :—

A Free Miner may obtain a lease of an unbroken extent of five miles of a river, but not more than six such leases will be issued in favour of an individual or company.

The lease shall be for a term of 20 years, renewable from time to time thereafter in the discretion of the Minister of the Interior. The lessee's right of mining and dredging shall be confined to the submerged bed or bars in the river below low water mark, that boundary to be fixed by its position on the 1st day of August, in the year of the date of the lease.

The lease shall be subject to the rights of all persons who have received or who may receive entries for claims under the Placer Mining Regulations.

The lessee shall have at least one dredge in operation upon the five miles of river leased to him within two seasons from the date of the lease, but if he obtains more than one lease, one dredge for each 15 miles, or portion thereof, shall be held to be in compliance with this regulation.

The rental is \$100 per annum for each mile of river leased.

The lessee shall pay to the Crown a royalty of 10 per cent on the output in excess of \$15,000 for each five miles of river leased; but the lessee under one lease shall not be entitled to the exemption as to royalty where the dredge or dredges used by him have been used in dredging by another lessee, or in any case in respect of more than 30 miles.

The lessee is permitted to cut free of all dues on any land belonging to the Crown such timber as may be necessary for the purposes of his lease, but such permission shall not extend to timber which has been or may be granted to other persons or corporations.

The regulations also provide that the lessee shall not interfere with free navigation of the river nor with the construction of roads, ways, bridges, drains or other public works. It is also provided that the lessee shall not transfer a lease without the consent in writing of the Minister of the Interior.

## REGULATIONS RE DREDGING, MANITOBA AND N. W. TERRITORIES.

The regulations now in force provide that a Free Miner can obtain two leases of five miles each. The lease is for a term of twenty years, renewable from time to time thereafter in the discretion of the Minister of the Interior.

The lessee's right is confined to the submerged bed or bars of the river below low water mark, and is also subject to the rights of all persons who have received or who may receive entries for bar diggings or bench claims.

The lessee shall have a dredge in operation within one year from the date of the lease for each five miles leased to him. If, however, a company or individual has obtained more than one lease, one dredge for each fifteen miles or portion thereof, will be accepted. The rental is \$10 per annum for each mile leased. The lessee shall pay to the Crown a royalty of 2½ per cent on the output after it exceeds \$10,000.

## Department of the Interior.

The lease provides that the lessee shall not interfere in any way with the navigation of the river or with any roads, ways, bridges, drains and other public works and improvements now existing or which may be made in the future.

The lease shall provide that any one who has or who may receive entry under the mining regulations shall be entitled to run tailings into the river at any point thereon, also to mine two feet below the surface of the water at low water mark by putting in wing dams.

Provided that it shall not be lawful for such person to construct a wing dam within one thousand feet from the place where any dredge is being operated, nor to obstruct or interfere in any way with the operation of any dredge. This provision shall also apply to leases issued anterior to 13th January, 1899.

### HYDRAULIC MINING.—YUKON TERRITORY.

REGULATIONS for the disposal of mining locations in the Yukon Territory to be worked by the hydraulic or other mining process, approved by Order in Council dated 3rd December, 1898.

The following is a synopsis of the regulations :—

Locations may have a frontage of from one to five miles, as may be decided by the Minister of the Interior, and a depth of one mile, but where such location is situated in a valley its depth may extend to the limits of the valley, if so ordered by the Minister of the Interior.

Each alternate claim shall, unless otherwise ordered by the Minister of the Interior, be reserved for the Crown.

Locations shall be disposed of by public competition, except those which have been applied for either at Ottawa or at Dawson on or before the 3rd of December, 1898. It is necessary, however, for these applicants to furnish the Department of the Interior with two reports—one from the Commissioner of the Yukon Territory that it has been proved to his satisfaction that the applicant himself or a person acting for him, was upon and actually prospected prior to the 3rd of December, 1898, the ground included in the location—and the second from the Gold Commissioner that the ground included in the location is not being worked and is not suitable to be worked under the regulations governing placer mining; but no person under this provision shall be given a lease for more than one location.

Before a lease is issued it is necessary for the applicant to obtain a Free Miner's Certificate and file in the Department of the Interior at Ottawa a Dominion Land Surveyor's plan of the location. The term of the lease is twenty years, and the rental \$150 for each mile of frontage.

The same royalty shall be paid upon the output of gold as is provided or may hereafter be provided in the case of placer claims, except that there shall be exempted from such royalty \$25,000 of the annual output, the royalty to be paid in the manner provided in the regulations governing placer mining.

The lessee is required to expend in operating his location not less than \$5,000 during each year from the date of his lease.

The lessee may cut, free of dues, such of the timber on a location as may be necessary for working the same in connection with his mining operations, but not for sale or traffic, and provision is made that the Commissioner of the Yukon Territory may grant a permit to any person to cut and remove from a location cordwood for his own use when such cordwood cannot otherwise be had within reasonable distance; but no such permit shall convey the right to cut or remove wood required by the lessee for his mining operations.

Leases will be granted to the following persons upon their complying with certain provisions of the regulations :—

Name.	River.	Miles.	Name.	River.	Miles.
R. Anderson	Hunker Creek	2½	Hon. E. H. Bronson and		
J. J. Gnerin	Stewart	2½	C. C. Ray	Bonanza	2½
W. F. Wilson	Stewart	5	E. Griffith et al.	Divide between Indian and Stewart	5
J. Foster	Klondike	2½	H. B. Mitchell	"	2½
McGregor & Frost	Indian	2½	R. H. Graham	"	2½
F. Brown	Indian	2½	D. G. Kirk	"	2½
R. L. Word	Indian	2½	G. W. Mitchell	"	2½
F. X. Halder	Indian	5	H. B. Warren	"	2½
H. B. McGiverin	Indian	2½	C. Belcourt	"	2½
J. E. Curren	Indian	2½	Mason-Bennett, Joyce and		
Thos. Howard	Indian	2½	Dickson	Australia	10
R. Tipple	Indian	2½	M. Hickson	"	2
J. G. Lupien	Lewes	5	J. J. Healy	Nelson	5
S. Word	Forty Mile	5	North American Transportion Company	Miller	5
D. Mulholland	Independence	2½	Isabella M. Healy	Yukon	5
S. E. Adair	Kahsha	2½			
A. E. Philip	Bonanza	2½			
R. Lee et al.	Bonanza	1			

#### COAL MINING LANDS.

The number of applications received during the year was 128. The revenue for the year derived from the sale of coal lands was \$1,833.74. The total area of coal lands sold up to the 1st July, 1897, was 16,423.86 acres and the total amount received therefor was \$158,265.53.

The regulations for the disposal of Dominion Lands containing coal issued under the authority of an Order in Council of the 17th of September, 1889, as amended by subsequent Orders, provide that locations of an area not exceeding 320 acres may be reserved for an applicant for a period of sixty days to prospect for coal thereon, upon payment of a fee of \$10, provided an expenditure is made of \$2 per day, and a location of the same or a less area may be sold at the rate of \$10 per acre, cash, unless the coal is anthracite, in which case the price is \$20 per acre, cash.

In order that settlers and others who were living some distance from coal mines which were being worked by persons who purchased the same, either from the Crown or from some other source, might obtain their coal supply, the Governor in Council on the 11th of November, 1895, authorized the issue of permits to mine coal for domestic purposes upon payment of a royalty of twenty cents per ton for anthracite coal, fifteen cents per ton for bituminous coal, and ten cents per ton for lignite coal.

Regulations for the issue of the permits were issued under the authority of an Order in Council dated the 9th February, 1897.

The regulations provide that the location shall be marked on the ground; that the frontage thereof shall not exceed three chains, and the length thereof shall not exceed ten chains, nor shall it be less than five chains except where the ground is covered by a prior location; that the applicant shall within thirty days after marking the location file his application with the Agent, who shall issue a permit upon receipt of an annual rental of five dollars for any area less than one acre, and for an area of one acre or over at the rate of five dollars an acre; and that returns shall be made monthly to the agent and the royalty paid upon the quantity of coal mined.

In the Yukon Territory all applications for coal lands are to be made to the Crown Timber Agent and Land Agent, who is empowered to sell such lands subject to the approval of the Commissioner, at \$40 per acre, cash, if the coal is anthracite, and \$20 per acre, cash, for any other class of coal. The sale of such lands to be subject to the other conditions imposed in the sale of other public lands in the said Territory with reference to their maintenance for town site purposes.

# Department of the Interior.

## IRRIGATION.

During the year sixty-nine applications for authority to divert water for irrigation and other purposes were received at the Department, and forty-four applicants received permission to construct works in accordance with the provisions of the North-West Irrigation Act. Thirty-five licenses have been issued to divert water; 177 ditches, having a total length of 409 miles, have been constructed.

The North-West Irrigation Act, under which the applications referred to in the preceding paragraph were made, was assented to by Parliament on the 13th of June, 1898. The provisions of the Act and the regulations made thereunder may be briefly outlined as follows:—

An applicant for permission to construct works to divert a quantity of water exceeding ten cubic feet per second, shall file with the Commissioner of Public Works at Regina a memorial setting forth the particulars with respect to the application, and a plan of the proposed works. He shall also give notice of such filing in some newspaper published in the neighbourhood, to be named by the Commissioner, not less than once a week for a period of thirty days.

So soon as these conditions have been complied with, the Minister of the Interior authorizes the construction of the works within a certain period. Upon the completion of the works an inspection thereof is made by the Chief Engineer and Surveyor of the Department of Public Works of the North-west Territories, and upon the receipt of a certificate from him that they have been built in accordance with the plans and specifications submitted by the applicant, a license is issued in his favour by the Minister of the Interior upon payment of a fee of \$10. It is, however, necessary that the applicant shall furnish proof that he is the owner of the land to be irrigated, or that he has arranged with the owners thereof to furnish them with water, before a license is issued in his favour.

The applicant for a less quantity of water than ten cubic feet per second is not required to file such full information in relation to his application as the Act prescribes in the case of an applicant who desires a larger quantity of water.

## GRAZING.

Leases for grazing purposes are issued for a term of 21 years, and the rental is at the rate of two cents an acre per annum, payable half-yearly in advance.

Lands included in a grazing lease may be withdrawn for homestead entry, sale or railway purposes, but no rental is charged on such lands from the date upon which they are withdrawn from the lease.

Grazing leases of school lands in the province of Manitoba may be issued for a term of five years, at an annual rental of six cents an acre, payable in advance, but the Department may terminate the lease at any time by giving the lessee three months' notice.

Grazing leases of school lands in the North-West Territories are for a term of five years, and the rental is at the rate of four cents an acre per annum, payable in advance. The Department may terminate the lease at any time by giving the lessee one year's notice.

Lessees of school lands are not allowed to break up or cultivate any portion of the lands leased.

A lessee of grazing lands is not entitled to the hay thereon, but he may, upon application to the Agent of Dominion Lands, obtain each year the first permit to cut on his leasehold whatever quantity of hay he may require for his own use, free of dues, the Department reserving the right to issue permits to other applicants to cut hay thereon.

## HAY

A settler in the vicinity of unoccupied Dominion lands may obtain a lease to cut hay on an area thereof not exceeding forty acres. The term of the lease is five years and the rental twenty-five cents an acre per annum, payable in advance.



Leases for hay purposes of not more than 640 acres and not less than 160 acres of school lands in the North-West Territories may be issued upon payment in advance of the rental at the rate of twenty-five cents an acre per annum.

No one is prevented by the Department from cutting hay without a permit, but anyone desiring to have a certain area of land containing hay reserved for him may take out a permit covering the same.

Applications for permits to cut hay are made after the 1st of January in each year to the Agent of Dominion Lands in whose agency the land containing the hay is situated, and permits are issued on and after the 1st of April following, upon payment of a fee of fifty cents and the dues hereinafter prescribed.

If before the 1st of April more than one application is received for a permit covering the same tract of land, the agent, if he cannot arrange a division of the land to suit the applicants may post a notice in his office calling for tenders for the purchase of the hay, and the permit is awarded to the person offering the highest cash bonus.

No hay shall be cut prior to a date to be fixed each year by the Minister of the Interior.

The dues chargeable for permits to actual settlers who require the hay for their own use are ten cents an acre or ten cents per ton, and to all other persons the rates are fifty cents an acre or fifty cents per ton, payable in advance.

## GRAZING LANDS.

The total number of leases of Dominion Lands, other than school lands, in force on the 1st January, 1899, was 448, covering an area of 333,469·68 acres.

The following schedule shows the names of the lessees, the number of their ranches, and the area covered by each lease:—

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
141	P. McLaren	7,500·00	401	J. P. Tully	532·00
244	A. McLeod	960·00	402	Chas. E. Stevens	160·00
265	J. Henderson	1,280·00	403	Mrs. H. Surrey	640·00
315	H. T. Morton	640·00	405	G. W. Quick	1,200·00
318	F. W. Peacock	478·29	406	Jas. Nicholson	2,560·00
327	P. Byrne	480·00	408	J. S. Rose	2,560·00
329	Lachlan Collie	306·50	410	Jas. Hastie	640·00
331	F. Murray-Honey and Lewis Parsons	5,280·00	413	H. A. Greeley	2,000·00
333	R. G. Robinson	1,120·00	414	A. T. Wallace	640·00
334	William Collie	160·00	415	S. T. Fawcett	800·00
341	G. J. Gagen and W. A. H. à Court	5,600·00	416	David Bertram	1,124·00
344	A. T. Wallace	1,920·00	419	A. T. Wallace	1,260·00
348	Leeson & Scott	1,920·00	424	John Cumberland	960·00
349	John G. Collins	1,280·00	426	Fred. W. Fisher	289·00
354	Sibbald & Alford	640·00	+27	H. A. Sibbald	320·00
356	Wm. Graham	477·00	430	D. W. Newbury	640·00
357	F. W. Peacock	129·65	431	Couture & Bourré	1,920·00
365	Neil Hanson	640·00	432	Henry Hamilton	2,240·00
368	Thomas Johnson	1,920·00	433	Ed. Heffer	640·00
369	J. & W. Potts	741·00	439	Wm. R. Abbott	640·00
373	John Cooil	1,280·00	443	McKav & Balding	2,560·00
374	L. C. Brown	480·00	444	Wm. Strothers	640·00
377	John Cheeseman	320·00	446	H. H. Fauquier	320·00
378	J. R. Craig	2,560·00	448	Walter B. Elliott	640·00
380	R. G. Robinson	800·00	451	Thos. Monkman	445·00
392	Joseph Dugan	347·75	452	Lethbridge Sheep Rancho Co.	2,560·00
393	W. H. Moodie	56·00	454	Chas. W. May	160·00
395	John Cooil	480·00	456	Heon & Duhaime	1,724·77
398	John Harvey	597·50	457	Wm. Turner	2,082·00
400	Ronald Greig	2,560·00	458	Rev. John McDougall	2,952·00
			459	Henri de Soras	1,742·00
			460	Samuel Fletcher	1,286·00

# Department of the Interior.

## LESSEES of Grazing Lands—Continued.

Rancho No.	Name.	Area in Acres.	Rancho No.	Name.	Area in Acres.
461	H. Prince & A. Beliveau.....	960 00	573	Johann Doerksen.....	320 00
463	Wm. Collie.....	128 00	574	J. D. McLeod.....	297 00
465	J. G. Collins.....	1,280 00	575	D. Matheson.....	640 00
468	J. W. & F. W. Ings.....	720 00	576	Miles Hogarth.....	320 00
470	E. D. Mackay.....	1,280 00	577	Geo. R. Hammond.....	640 00
471	Hugh McAlpine.....	3,032 00	582	Wm. N. Janes.....	640 00
472	R. G. Robinson.....	3,840 00	583	Wm. McMillan.....	648 00
474	Ed. Fearon.....	5,742 00	584	Frank Hourd.....	809 00
475	Jas. Warnock.....	1,280 00	585	Thomas Kerr.....	640 00
479	John Cheeseman.....	160 00	586	David Wilson.....	640 00
480	Frederick S. Smith.....	320 00	589	Napoléon Pomerleau.....	480 00
485	John Harvey.....	320 00	590	D. W. Coleman.....	828 00
486	John Lawrence.....	1,440 00	592	E. H. Botterel.....	160 00
490	S. W. Hungerford.....	640 00	595	Jas. Quigley.....	639 00
491	Jas. Hargrave.....	3,044 00	597	Johann F. Unger.....	160 00
492	Emiel Griesback.....	77 00	600	Jas. Tooke.....	640 00
494	Jos. Martin.....	640 00	601	Wm. Archibald.....	1,653 00
496	J. H. Beom.....	1,920 00	602	E. D. Harrison.....	640 00
498	John Biddle.....	320 00	604	Boyd Wanching Co.....	4,880 00
500	Thos. Hourd.....	1,970 00	606	Robert B. Warner.....	975 00
503	Donald Gunn.....	1,280 00	608	H. M. Morris-Read.....	640 00
505	Philip Williams.....	640 00	610	John McDonell.....	3,040 00
506	R. J. Christie.....	480 00	611	J. H. McNeil.....	160 00
510	Cornelius Peters.....	160 00	615	Benjamin Long.....	160 00
511	Cheeseman Bros.....	640 00	616	Mrs. A. A. Doig.....	160 00
514	Edward Henry.....	1,280 00	618	John Scarrow.....	320 00
515	C. D. Urquhart.....	552 72	619	Chas. Blair.....	2,196 00
516	Wm. Strothers.....	960 00	620	W. R. Jefferson.....	480 00
517	C. Perrenoud.....	640 00	622	G. L. Weatherald.....	320 00
520	Henri de Soras.....	960 00	624	Jas. H. Wallace.....	1,280 00
521	Jonathan Gillie.....	1,853 00	628	Donald Murray.....	326 00
523	Xavier Gougen.....	640 00	631	Wm. Sanders.....	1,280 00
524	Wm. Sinclair.....	320 00	632	Sanford McNeil.....	320 00
525	J. G. Morgan.....	640 00	633	R. A. Cowan.....	1,040 00
527	H. M. Morris-Read.....	619 00	638	C. D. Urquhart.....	320 00
528	Wm. Wilkins.....	160 00	639	Alfred Lloyd.....	960 00
529	John Hunsworth.....	1,120 00	640	Wm. Boyd.....	320 00
531	Alex. Glennie.....	320 00	642	Auguste Welke.....	160 00
533	Jas. Grayson.....	160 00	643	Thos. Kerr.....	160 00
536	John H. McNeil.....	160 00	647	G. F. Hirst.....	320 00
537	F. Shackleton.....	647 00	649	Wm. McCaw.....	640 00
539	C. Kettles.....	320 00	650	J. Bassett.....	320 00
540	L. C. Brown.....	480 00	651	Claudinaire & Clements.....	640 00
542	Hamilton Moorehead.....	640 00	652	Andrew Cumberland.....	320 00
543	D. McIntosh.....	288 00	654	Chas. W. May.....	320 00
544	Johann Broeske.....	160 00	655	Rev. Leo Gaetz.....	640 00
545	Rev. Leo. Gaetz.....	320 00	658	Geo. Grassick.....	640 00
546	C. Duck.....	166 00	660	John Dovell.....	1,280 00
547	R. E. Boner.....	640 00	663	Arthur Hassett.....	320 00
549	B. Prince.....	640 00	674	Chas. Lees.....	960 00
552	G. & J. Blackwood.....	720 00	680	Jos. Duhaime.....	800 00
553	A. E. E. Dunn.....	480 00	681	J. L. Thompson.....	640 00
554	Hugh Munro.....	640 00	682	H. Bowen.....	251 00
555	T. J. Armstrong.....	320 00	685	D. R. Tucker.....	1,600 00
556	Sigurjon Johnson.....	160 00	686	Sam. Whiting.....	160 00
557	W. S. Bilton.....	640 00	687	Leslie Hill.....	480 00
558	W. T. Warner.....	730 00	689	D. McKenzie.....	320 00
559	Louis N. Blache.....	640 00	690	Wm. Moore.....	640 00
561	John Stewart.....	640 00	692	Robt. McCordick.....	320 00
562	J. G. Farr.....	320 00	693	J. Hunter.....	160 00
563	Johann Krause.....	320 00	694	H. Munro.....	640 00
566	Thos. Minnaugh.....	1,063 00	695	Wm. Brownlee.....	800 00
567	Edward Hagell.....	640 00	699	J. H. McNeil.....	320 00
568	D. H. Cox.....	640 00	700	Wm. Turner.....	320 00
569	G. J. Radinzel.....	160 00	702	A. S. McKay.....	640 00
570	D. A. Best.....	325 00	703	R. Beatty.....	160 00
571	R. J. Christie.....	160 00	704	G. H. Jamieson.....	160 00
572	R. Page.....	640 00	705	R. W. Cowan.....	1,120 00

## LESSEES of Grazing Lands—Continued.

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
706	Jos. Lawford	640 00	823	A. Martin	320 00
707	Thos. Pearson	160 00	825	M. J. Herbert	640 00
708	Jos. Burgess	480 00	826	G. A. Dorrance	480 00
709	Thos. Harkness	960 00	827	Jas. Davidson	160 00
710	Geo. & Robt. Cann	320 00	829	Thos. Mathie	320 00
712	D. W. Skinner	1,280 00	831	E. Beliveau	640 00
713	J. T. Krahn	160 00	837	R. E. Fiske & W. A. Thompson	640 00
714	J. A. W. Fraser	640 00	840	Lusk Bros	640 00
715	Gordon & Ironsides	1,600 00	841	Wm. Edge	640 00
716	D. Whipps	1,120 00	843	Thos. Kerr	160 00
717	R. B. Irvine	160 00	845	C. E. Weatherall	320 00
718	John McEchen	640 00	846	E. A. Windham	320 00
719	A. N. Bennett	160 00	849	B. P. Alford	640 00
720	Jas. Monkman	149 00	851	J. A. Paterson	480 00
722	M. T. Bambridge	640 00	852	W. T. Clements	640 00
724	Alex. Middleton	320 00	853	Jas. Johnson	480 00
725	Jas. McDougall	295 00	854	Levi Havens	640 00
726	Jas. Gilchrist	137 00	855	John McEachen	320 00
731	David White	480 00	856	L. McKinnon	6 00
733	Jas. E. Wilson	320 00	858	C. Rodman	480 00
734	Jas. Johnson	480 00	859	P. McDougall	160 00
735	S. F. Allen	480 00	860	Geo. A. Love	1,280 00
736	V. J. Beaupré	1,600 00	861	E. J. Johanson	80 00
738	J. Quirk	1,280 00	862	F. J. Bruce	307 00
740	G. B. Pare	550 00	863	F. H. Towers	1,920 00
741	E. Loder	640 00	864	R. E. Bonar	640 00
742	Peacock & Vavasour	640 00	868	G. W. Quick	960 00
743	A. C. Hare	160 00	869	D. E. White	320 00
744	Rev. John McDougall	640 00	871	F. A. Jackson	160 00
745	R. S. E. Harrison	1,000 00	872	A. Sibbald	480 00
746	P. Harder	80 00	873	H. E. Sibbald	320 00
747	C. H. Clements	160 00	874	W. Bell-Irving	2,080 00
748	J. Lawrence, jr.	1,440 00	876	Cheeseman Bros.	1,120 00
749	J. D. Norrish	480 00	877	W. D. Kerfoot	3,040 00
750	G. Weidman	160 00	878	Jas. Jackson	320 00
753	John Harvey	640 00	880	J. M. Wilson	1,920 00
754	Ronald Hewat	640 00	881	V. F. Neil	85 00
759	Jas. Jackson	707 00	883	Jos. Fisher	320 00
762	E. Clayton	640 00	885	C. Payton	2,400 00
763	T. A. Coad	320 00	886	E. H. Healy	160 00
764	John Kidd	320 00	887	R. Campbell	1,280 00
765	D. C. Morrison	160 00	888	Wm. Nicol	640 00
771	Gordon & Ironsides	320 00	889	G. Barclay Bruce	640 00
772	L. C. Parsons	2,560 00	890	Thos. M. Weatherald	640 00
773	A. Turnbull	378 00	891	H. F. Lawrence	1,280 00
774	J. Burgess	240 00	892	Wm. Graham, jr.	960 00
775	Samson & MacNaughton	640 00	893	J. L. Rooke	100 00
776	Wellman & Bingham	640 00	894	H. B. Dewolf	320 00
777	Raikes & Lawford	160 00	895	W. F. H. Collie	320 00
785	R. Insinger	1,600 00	896	J. B. Reid	192 00
794	D. M. T. Powell	160 00	898	Geo. Ness	320 00
797	A. McDonald	2,400 00	899	A. B. McRae	91 50
798	C. F. Pretty	263 00	900	A. Beom	1,280 00
799	Rev. J. McDougall	1,280 00	901	J. McGarry	1,920 00
801	F. Riske	320 00	902	J. A. Fleming	640 00
804	D. McIver	320 00	903	R. Ronsay	320 00
807	R. Walsh	640 00	904	G. Tranter	640 00
809	A. B. McRae	160 00	905	E. B. H. Harris	160 00
813	M. A. Murray	640 00	906	Jos. Hoyt	316 00
814	G. Stainer	160 00	909	A. Middleton	160 00
815	Chas. Lees	640 00	910	J. L. Thompson	640 00
816	J. Grayson	640 00	911	Jas. Walsh	320 00
817	W. E. Schraeder	320 00	914	Wm. Salt	320 00
818	F. W. Cleeve	160 00	915	Jos. Burgess	320 00
819	J. A. Kerr	160 00	916	H. R. A. Payne	160 00
820	J. P. Wiebe	160 00	918	J. A. Black	640 00
821	W. Taylor	640 00	919	C. Blair	960 00
822	B. P. Alford	320 00	922	Wm. Stewart	640 00

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## LESSEES of Grazing Lands—*Concluded.*

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
923	W. J. Turton	1,440 00	1052	H. Fraser	242 00
924	H. McDougall	331 00	1053	G. and J. Blackwood & Co.	164 00
925	R. P. Alford	320 00	1054	Bateman & Wood	320 00
926	P. Jonsson	40 00	1057	J. Garry	320 00
930	Isaac Fleming	320 00	1058	A. J. Shaw	320 00
933	C. E. Weatherald	640 00	1059	J. E. Wright	320 00
935	J. C. Warren	320 00	1060	A. Atkins	480 00
936	John Ellis	322 00	1061	E. Harman	480 00
937	Geo. Wells	320 00	1062	F. S. Patterson	640 00
938	George Godlonton	320 00	1064	P. Doyle	640 00
939	E. Code	320 00	1065	Leeson & Scott	320 00
940	A. Taylor	480 00	1066	R. Cummings	800 00
943	James Quinton	640 00	1067	G. Krantz	80 00
944	George F. Watson	640 00	1068	W. Huckvale	4,800 00
946	W. D. Caven	160 00	1069	L. S. Mauzer	320 00
947	W. D. Caven	160 00	1070	C. David	160 00
948	Milton Jefferson	320 00	1071	F. Jackson	320 00
952	Hugh Kippen	320 00	1072	Hull Bros.	1,920 00
953	F. A. Clements	640 00	1074	F. Janet	1,280 00
966	J. and R. Copithorne	640 00	1075	C. Blair	960 00
968	L. Havens	320 00	1076	J. and R. Copithorne	1,920 00
970	H. H. Diehl	160 00	1078	Jos. Bannerman	640 00
971	W. J. Killett	640 00	1079	J. Meehan	160 00
973	Wm. and C. R. Brown	480 00	1080	A. P. Welsh	640 00
978	S. T. Fawcett	320 00	1082	Jos. Girard	1,920 00
979	C. P. Healy	480 00	1086	H. & J. Bourne	639 00
980	F. White	3,200 00	1088	W. J. Lee	640 00
981	John Turton	480 00	1089	W. R. Abbott	320 00
982	F. Goodwin	320 00	1092	J. Hawk	320 00
984	C. Sawatky	160 00	1093	C. Davis	160 00
986	C. Saunders	1,280 00	1095	T. B. Huddleson	320 00
987	J. H. Hassett	320 00	1099	J. A. Turner	270 00
988	A. E. Cameron	320 00	1100	W. G. Reed	320 00
989	George Gordon	640 00	1101	R. B. Warner	480 00
990	Wm. McDonald	320 00	1103	W. V. Hemmingway	160 00
991	J. S. Blake	150 00	1107	John Lawrence	960 00
992	G. A. Love	640 00	1108	G. and J. Blackwood	160 00
994	D. P. McDonald	320 00	1109	E. W. Rackstraw	2,080 00
995	T. H. Hogan	320 00	1111	Geo. Purdie	320 00
996	Jos. Howard	1,920 00	1113	O. Blouin	148 00
1000	C. H. Clements	160 00	1114	J. D. Norrish	1,280 00
1001	H. Hickling	480 00	1115	John Black	75 00
1017	P. Drummond	160 00	1116	F. S. Blake	160 00
1018	W. F. Lawrence	637 00	1118	Chas. Lees	480 00
1019	Rev. J. M. Douglas	640 00	1120	Jas. Dupe	960 00
1021	Jos. Clemens	640 00	1121	J. Lantier	1,280 00
1027	E. Healy	320 00	1122	J. B. Scott	100 00
1029	Wm. W. Arnold	368 00	1124	R. P. Alford	160 00
1030	Thos. Johnson	1,280 00	1125	Wm. Harkness	640 00
1033	S. W. Hewett	320 00	1126	Johann Oswald	160 00
1037	J. A. W. Frazer	640 00	1127	G. F. Bownall	320 00
1038	G. A. Love	640 00	1129	C. G. Healey	640 00
1040	James Bannerman	320 00	1131	N. McInnes	640 00
1041	C. H. Clements	320 00	1132	Thos. Reid	160 00
1042	W. R. Moseley	160 00	1135	Wm. Hinde	640 00
1046	S. M. Bannerman	640 00	1136	Murton Ingham	1,280 00
1047	C. H. Seymour	320 00			
1049	J. Bourne	160 00			
				Total area	333,469 68

The total number of leases of school lands in the North-West Territories for grazing purposes, in force on the 1st January, 1899, was eighty-seven, containing a total area of 28,228·09 acres. The names of the lessees and the number of their ranches are as follows :—

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
473	Rev. John McDougall	640 00	844	D. McLean	160 00
478	F. W. Godsall	605 00	847	Robert Miller	160 00
493	Hull Bros	640 00	870	J. Cinnamon	160 00
497	J. H. Beom	640 00	917	Mrs. E. A. Richardson	320 00
499	Chas. Knight	640 00	929	Geo. Gordon	320 00
504	W. C. H. Parby	160 00	931	Robert Scott	320 00
509	W. E. Smith	320 00	941	H. C. Hewitt	640 00
518	Wm. Brealey	640 00	950	J. R. Dinnin	320 00
526	P. Burns	640 00	954	H. Hecking	640 00
530	Alex. Glennie	320 00	957	Wm. Dickson	500 00
548	W. H. Minhinnick	40 00	958	J. C. Wilson	74 00
550	John N. West	160 00	959	C. Swart	160 00
564	Wm. N. Jaens	320 00	962	Thos. A. Grigg	160 00
587	W. Julius Hyde	640 00	976	John Harrison	640 00
588	A. Caswell	320 00	993	G. A. Love	640 00
593	Hull Bros. & Co.	640 00	997	A. MacDougall	160 00
594	Daniel McIntosh	320 00	998	D. Osborne	160 00
612	J. C. C. Bremner	80 00	1007	J. G. Beedie	160 00
623	Dept. of Indian Affairs	640 00	1008	Constantine Augé	160 00
626	D. McIntosh	320 00	1010	S. E. Sordberg	122 00
653	James R. Dyer	320 00	1011	F. Dunand	160 00
664	Thos. Clarke	160 00	1014	A. C. Mauzer	160 00
665	Ricardo & Bevan	303 00	1016	F. Fyke & Sons	160 00
666	G. H. Elliott	160 00	1022	J. Hewitt	108 00
668	Geo. Tranter	160 00	1024	F. Schweizer	160 00
676	G. H. Jamieson	160 00	1028	Wm. W. Arnold	46 00
679	Jas. Johnson	640 00	1031	Thos. Johnson	640 00
684	John Boyd	160 00	1032	M. Lulz	160 00
696	A. C. Fraser, jr.	640 00	1039	Hull Bros. & Co.	640 00
697	Chas. Spalding	160 00	1044	Van Stross Bros	89 00
721	Chas. E. Morris	160 00	1045	J. M. Kemmis	640 00
739	H. Anderson	160 00	1077	J. D. Caswell	320 00
752	M. McNaught	320 00	1081	W. A. Rawles	160 00
766	S. Mitchell	170 09	1085	J. W. Silverthorn	575 00
778	M. Griening	160 00	1090	A. Monroe	640 00
780	Alberta Rancho Co	372 00	1094	J. W. Dunn	640 00
783	J. V. Thompson	320 00	1096	Jas. Dick	160 00
784	A. Yersey	150 00	1097	M. Catley	160 00
786	W. H. Ball	640 00	1102	J. N. West	80 00
792	J. Rathgeber	160 00	1104	Thos. Banks	320 00
795	W. E. Smith	320 00	1105	John Lineham	154 00
805	H. M. Hatfield	640 00	1130	Geo. Hutton	160 00
806	L. McKinnon	540 00			
808	F. H. Towers	160 00			
834	A. Boyd	160 00			
				Total area	28,228 09

## Department of the Interior.

The total number of leases of school lands in Manitoba for grazing purposes, in force on the 1st January, 1899, was seventy-six, containing a total area of 15,811.25 acres. The names of the lessees and the numbers of their ranches are as follows:—

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
560	John Clark.....	160 00	812	Sawatsky & Harms.....	160 00
578	James Cathrea.....	480 00	833	J. Scully.....	160 00
580	M. H. Fieldhouse.....	160 00	836	Alex. McNaughton.....	320 00
581	John T. Slater.....	160 00	839	John Blair.....	160 00
621	J. C. Lewis.....	320 00	865	Thos. Sanderson.....	160 00
627	Joseph Petch.....	480 00	866	A. E. McDonald.....	320 00
634	J. R. Armitage.....	160 00	867	L. Ironsides.....	100 00
636	The Viscount d'Aubigny d'Assy.....	320 00	897	J. J. Setter.....	160 00
637	H. & A. Delf.....	160 00	908	Wm. Howden.....	160 00
641	J. Thordarson.....	160 00	912	A. Graham.....	320 00
646	Daniel McCurdy.....	160 00	928	G. Johnson.....	80 00
648	J. M. Cameron.....	160 00	932	A. McNeil.....	160 00
656	Murdock McLean.....	160 00	934	W. G. Pollock.....	480 00
659	J. S. Jackson.....	640 00	942	K. Scarth.....	160 00
667	Wm. McKinnon.....	320 00	945	Wm. McKinnon.....	320 00
672	Jos. Yeomans.....	68 00	955	Paul Bourque & A. Bernie.....	320 00
673	Colin McIver.....	38 50	956	R. F. Lyons.....	320 00
677	W. J. Rowe.....	160 00	963	J. W. Barker.....	160 00
678	Noble Jordan.....	160 00	964	Chas. Goldstone.....	363 75
698	A. McAulay.....	160 00	965	J. S. Williams.....	320 00
701	J. Meyul & G. Johnson.....	160 00	969	A. Wagner.....	28 00
729	S. Clark.....	160 00	972	Thos. Bolton.....	160 00
730	H. G. Winslow.....	160 00	974	C. Boes.....	160 00
755	Samuel Chittick.....	160 00	977	Wm. Hasselfield.....	160 00
756	John J. Mayland.....	160 00	999	W. Hardy.....	126 00
757	Tait & Duncan.....	640 00	1002	P. Wiebe & A. Duck.....	70 00
767	J. P. Aitchison.....	160 00	1003	M. Lundy.....	160 00
769	J. Clarke.....	640 00	1004	N. L. Taylor.....	160 00
779	W. Rothwell.....	160 00	1005	Peter Falk.....	46 00
781	R. W. Scharf.....	160 00	1006	G. S. Delf.....	160 00
782	W. D. Staples.....	160 00	1009	W. A. Robinson.....	160 00
787	J. Armitage.....	160 00	1012	R. Scott.....	28 00
789	J. Kehoe.....	160 00	1013	Chas. Cummings.....	160 00
790	Thos. Clark.....	160 00	1020	Thos. L. Fargey.....	160 00
791	J. J. Moyr.....	160 00	1026	J. N. Brown.....	160 00
793	J. Downey.....	143 00	1034	W. C. Burns.....	320 00
803	H. McLean.....	160 00	1098	P. Hiebert <i>et al.</i> .....	320 00
810	L. Bernardin.....	160 00			
811	Jam. Arnold.....	160 00			
				Total area.....	15,811.25

## HAY.

The following statement shows the names of the persons who hold leases of Dominion lands for hay purposes :—

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
342	Samuel Perry .....	40 00	960	Chas. A. Peaker .....	40 00
440	Jonathan Rose .....	40 00	961	Jas. E. Peaker .....	40 00
447	Alex. McIntyre .....	40 00	1023	J. W. Thoroughgood .....	40 00
450	Jas. Gilchrist .....	30 00	1035	J. A. Brooks .....	40 00
469	D. M. Finlayson .....	37 50	1036	G. A. Bull .....	40 00
477	Walter Bradley .....	40 00	1043	F. C. Hawkins .....	12 00
483	Wm. Thompson .....	20 00	1083	A. McKeown .....	40 00
487	W. H. Gray .....	40 00	1084	S. Sanderson .....	40 00
489	Frank L. Engman .....	40 00	1087	C. V. Carlson .....	37 00
535	Leonard Hornett .....	6 00	1091	A. Wyatt .....	40 00
614	Joseph Dugan, jun .....	40 00			
629	Wm. Moffatt .....	40 00		Total area .....	832 50
848	John Boyd .....	40 00			

Six leases of school lands for hay purposes have been issued, the following being the names of the lessees :—

Ranche No.	Name.	Area in Acres.	Ranche No.	Name.	Area in Acres.
361	H. Anticknap .....	160 00	828	Geo. W. Stephenson .....	160 00
404	Gagnon & à Court .....	160 00	850	W. A. H. à Court .....	160 00
462	G. S. Spurgin .....	160 00			
534	Chas. Moore .....	58 00		Total area .....	858 00

## Department of the Interior.

The following is a statement of the office work performed from the 1st July, 1897, to the 1st July, 1898 :—

No. of letters sent . . . . .	12,647
“ pages of memoranda and schedules . . . . .	5,805
“ plans and sketches prepared . . . . .	421
<i>Timber—</i>	
No. of berths applied for . . . . .	336
“ “ granted . . . . .	82
“ licenses for timber berths prepared (in duplicate) . . . . .	135
Instructions issued for survey of timber berths . . . . .	15
No. of returns of surveys of timber berths received and examined . . . . .	27
“ returns of saw-mills received and verified . . . . .	234
“ permits to cut timber issued by agents, also entered and checked . . . . .	4,660
“ accounts kept posted . . . . .	292
“ timber seizures entered and checked . . . . .	230
<i>Grazing—</i>	
No. of applications for grazing lands received . . . . .	524
“ leases of grazing lands authorized to be issued . . . . .	203
“ leases of grazing lands issued . . . . .	168
“ leases of hay lands authorized to be issued . . . . .	9
“ “ issued . . . . .	2
“ applications for hay lands . . . . .	61
“ accounts kept posted: Grazing, 651; hay, 29 . . . . .	680
“ hay permit forms used by the Dominion Lands Agents, also entered and checked over at this office . . . . .	3,610
<i>Mining—</i>	
No. of accounts kept posted . . . . .	453
“ applications for coal locations received . . . . .	128
“ coal locations of 320 acres and less reserved for prospecting . . . . .	29
“ applications for mining locations other than coal . . . . .	1,576
“ new entries and renewals for mining locations granted by Dominion Lands Agents and by the Gold Commissioner for the Yukon District other than coal . . . . .	9,657
“ applications for petroleum . . . . .	16
“ water power . . . . .	1
<i>Irrigation—</i>	
No. of applications <i>re</i> irrigation recorded . . . . .	69
“ memorials examined . . . . .	113
“ plans examined . . . . .	70
“ authorizations for construction of ditches issued . . . . .	44
“ assignments of irrigation, applications examined and recorded . . . . .	3
“ certificates issued by Inspector, examined and recorded . . . . .	13
“ cancellation of irrigation applications issued and recorded . . . . .	9
“ irrigation licenses issued (in triplicate) . . . . .	32

I have the honour to be, Sir,

Your obedient servant,

G. U. RYLEY,  
*Chief Clerk.*



A.—STATEMENT of Receipts on account of Timber, Grazing, Hay, Mineral and Irrigation, on Dominion Lands, for the fiscal year 1897-98.

Month.	Timber Dues.	GRAZING LANDS.		Hay Lands.	Mining Lands.	Stone Quarries.	Coal Lands.	Irrigation Revenue.	Total.
		Cash.	Scrp.						
1897.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July..	4,533 91	259 74		1,622 91	263 00		4 25		6,683 81
August..	6,842 94	173 81		289 70	254 00				7,560 45
September..	3,068 90	264 80		47 85	9,424 00				12,805 55
October..	6,086 29	981 39		13 95	238 00				7,319 63
November..	8,482 48	367 57		33 95	3,033 00		5 25		11,922 25
December..	7,598 80	387 83	416 45	44 65	152 00		32 70	10 00	8,642 43
1898.									
January..	18,015 12	177 75		517 90	2,106 00	41 00	28 55		20,886 32
February..	12,861 99	369 11		238 60	162,136 66		84 73	10 00	176,001 09
March..	18,746 76	413 12	93 94	255 58	125,581 13	35 00	32 00		145,157 53
April..	16,625 29	188 72		781 40	19,505 26			20 00	37,120 67
May..	9,099 98	520 57		649 22	71,195 99	35 00	144 05		81,644 81
June..	7,351 32	624 17		2,124 93	10,589 00		70 00		308,182 97
					287,423 55				
Totals....	119,313 78	4,728 58	510 39	6,620 61	692,201 59	111 00	401 53	40 00	823,927 51

B.—STATEMENT of Receipts on account of Timber, Grazing and Hay, on School Lands, for the fiscal year 1897-98.

Month.	Timber.	Grazing.	Hay.	Total.	REVENUE CLASSIFIED BY DISTRICTS				Totals.
					Mani-toba.	Assini-boa.	Al-ber-ta.	Sask-at-che-wan.	
1897.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July		46 90	522 45	569 35	467 60	54 05	45 20	2 50	569 35
August	1 50	107 42	98 80	207 72	138 20	2 50	66 62	0 40	207 72
September		76 40	3 80	80 20	41 30	26 10	12 80		80 20
October	110 75	80 23	8 10	199 08	170 05		29 03		199 08
November		138 50	9 90	148 40	99 78	26 22	22 40		148 40
December	147 75	69 40	12 10	229 25	210 05	19 20			229 25
1898.									
January	20 25	134 32	198 90	353 47	187 07	91 30	44 80	30 30	353 47
February	42 75	102 40	108 80	253 95	219 75	29 30	0 40	4 50	253 95
March	45 25	376 23	119 10	540 58	315 26	129 92	94 40	1 00	540 58
April	8 00	131 14	342 70	481 84	335 86	57 60	85 38	3 00	481 84
May	79 00	228 78	326 25	634 03	466 23	72 70	92 10	3 00	634 03
June		163 73	641 90	805 63	518 20	112 00	167 63	7 80	805 63
Totals.....	455 25	1,655 45	2,392 80	4,503 50	3,169 35	620 89	660 76	52 50	4,503 50

Department of the Interior.

DOMINION LANDS.

C.—STATEMENT showing the Revenue derived from Timber, Minerals, Grazing, Hay and Irrigation, from 1st July, 1872, to the 1st July, 1898.

Fiscal Year.	Timber Dues.		GRAZING LANDS.		HAY LANDS.		Coal Lands.	Stonel Quarries.	Mining Lands.	Mill Site. Scrip.	Irrigation Revenue.	Yearly Totals.
	\$	cts.	Cash.	Scrip.	Cash.	Scrip.						
1872-73	109 25											109 25
1873-74	2,710 55											2,710 55
1874-75	2,335 25											2,335 25
1875-76	387 00											387 00
1876-77	320 00											320 00
1877-78	1,620 00											1,620 00
1878-79	325 00											325 00
1879-80	25,121 46											25,121 46
1880-81	32,028 34											32,028 34
1881-82	58,753 14											58,753 14
1882-83	90,065 46		2,245 00				40 00					113,824 80
1883-84	147,983 10		11,370 60				380 00	33 91				159,994 60
1884-85	87,474 99		17,089 75				498 90	105 00	14 00			106,980 37
1885-86	64,820 31		28,962 51				232 40	46 98	329 00			120,492 58
1886-87	65,111 74		14,242 77				40 00	21 78	257 00			98,798 73
1887-88	94,964 55		5,922 47					6 00	135 00			126,284 03
1888-89	90,290 00		2,207 69				14 00	4 21	212 00			113,246 87
1889-90	84,612 95		1,305 57				39 80	51 75	233 90			104,212 23
1890-91	102,902 71		3,079 55				87 59	136 53	186 00			133,027 60
1891-92	106,461 35		3,726 80				190 39	51 36	577 30	160 00		130,964 47
1892-93	105,865 24		3,726 80				67 70	41 85	430 00			130,054 56
1893-94	81,290 51		5,740 79				374 53	413 91	274 65			100,862 31
1894-95	74,070 20		5,353 72				23 05		135 00			93,290 46
1895-96	61,923 47		7,071 86				67 45	6 42	232 00			81,064 74
1896-97	68,992 82		4,715 01				81 00	31 50	3,162 00		98 00	84,824 01
1897-98	119,313 78		4,728 58				401 53	111 00	692,201 59		40 00	823,927 51
Totals	1,569,893 17		147,587 90	162,007 20	63,631 47	160 00	3,214 49	1,062 19	698,440 44	160 00	138 00	2,646,324 86

SCHOOL LANDS.

D.—STATEMENT showing the Revenue derived from Timber, Grazing, Hay, and Stone Quarries, commencing with the fiscal year 1883-84, and ending the 30th June, 1898.

Fiscal Year.	REVENUE CLASSIFIED BY DISTRICTS.				Total.
	Timber.	Stone Quarries.	Grazing.	Hay.	
	Manitola.	Assiniboia.	Alberta.	Saskatchewan.	
1883-84.	\$ cts. 36 50	\$ cts. 17 50	\$ cts. . . . .	\$ cts. 2,378 72	\$ cts. 36 50
1884-85.	136 00	. . . . .	. . . . .	1,059 41	136 00
1885-86.	1,238 11	. . . . .	. . . . .	1,539 17	1,238 11
1886-87.	940 26	. . . . .	. . . . .	2,040 85	940 26
1887-88.	1,333 99	. . . . .	. . . . .	1,836 88	1,333 99
1888-89.	695 86	. . . . .	. . . . .	2,064 17	695 86
1889-90.	919 10	. . . . .	. . . . .	2,478 39	936 60
1890-91.	489 22	. . . . .	. . . . .	3,067 94	3,067 94
1891-92.	270 81	. . . . .	. . . . .	251 80	39 45
1892-93.	831 50	. . . . .	. . . . .	535 30	135 60
1893-94.	530 13	. . . . .	32 38	447 55	338 48
1894-95.	617 72	. . . . .	263 14	372 11	407 59
1895-96.	279 63	. . . . .	724 99	2,014 74	574 30
1896-97.	501 36	. . . . .	1,141 38	2,368 02	673 76
1897-98.	455 25	. . . . .	1,655 45	3,169 35	660 76
Totals.	9,275 44	17 50	3,757 34	16,716 87	29,767 15
				4,808 77	3,085 34
				21,385 44	477 60
					29,767 15

# Department of the Interior.

CROWN TIMBER OFFICE,

WINNIPEG, 29th November, 1898.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to submit the annual report of the business of this agency or the year ended 30th June, 1898, to which I have added such auxiliary information as I considered would be of interest to the Department.

I enclose the following tabulated statements which it has been the practice in past years to append:—

(a.) General office returns showing amount of clerical work performed.

(b.) Statement showing, under various heads, the revenue collected from timber, etc.

(c.) List of names of licensees of timber berths, conducting operations on Dominion lands, together with the quantity of lumber, etc., manufactured, sold, and on hand by each licensee respectively.

It will not cause you surprise to learn that the work of the office has vastly increased during the year, in its every branch, having greatly exceeded in volume that of any previous year, and is steadily increasing. As an indication of this I may say that the correspondence at the office for the present year shows to have doubled that of two years ago. The letters received for the year numbered 11,959, while those sent out reached 10,024.

Much of the work is of such a character that it cannot be shown in tabulated form, and the returns sent to head office do not convey an idea of the time taken in checking and putting the various transactions in order for entry in the books of the office. The bulk of the business transacted being with a class of men entirely lacking in business training, delays of one kind or another are occasioned.

## RECEIPTS.

The total receipts from all sources paid to the credit of the Receiver General on account of revenue from Dominion Lands at this agency for the twelve months amount to \$60,121.03, of which sum \$35,191.59 was paid in principally on account of timber.

A reference to statement "B," attached, will show how this latter sum is made up.

## OBSERVANCE OF THE TIMBER REGULATIONS.

I am pleased to report a better disposition on the part of settlers and the public generally, within the past year, to conform to the regulations of the Department with respect to cutting of timber on lands of the Crown; and also of an increased interest in all matters pertaining to its maintenance.

The country is at last awakening to the necessity of providing against the rapid diminution in the timber supply, through ravages by fire and by the axe of improvident settlers, and as a result of this awakening, the Government timber officers have the moral support of a large and influential class, thus rendering their efforts to protect Crown timber more effective than in former years. I regret, however, to state that in spite of the efforts that have been made to give publicity to the regulations and to secure their observance, there have been a large number of prosecutions before the courts, resulting in every case in the conviction and punishment of the accused.

This action, while pleasing those who are observing the law, is proving a more effective restraint on trespassers than the method formerly followed, of simply placing the timber under seizure and exacting a penalty in the form of payment of double dues.

This manner of dealing with trespassers has not been applied in the other timber districts, and, as a result, the business is not being conducted in a manner satisfactory to the agents and officers supervising it. Owing to the difficulty in determining the proper procedure to be followed, persons who have stood out against the law, refusing to pay double dues on the timber cut illegally by them, have in many cases been allowed to retain peaceable possession, without anything in the nature of a fine having been exacted. This was pointed out in a former report of mine, from which I give the following extract:—

“For some years past the policy of the Government has been to deal in a very lenient manner with settlers and others cutting timber in trespass upon the lands of the Crown. The small fine imposed has not had a deterring effect in checking this illegal practice, and although the dues have been arranged to bear lightly on a farmer, particularly for the class of timber required for making improvements on his farm, the tendency has been, in the majority of cases, to run the risk of detection rather than take out permits in the regular way; and the utmost vigilance on the part of this office has not succeeded in preventing these evasions of the law. Much difficulty too has been experienced in collecting trespass dues on timber cut by settlers, even when the timber has been found and placed under seizure.

“Although the Act empowers the Crown to confiscate and sell the timber by auction, when the claimant refuses to pay the charges, it is seldom that buyers can be got, owing to the aversion on the part of neighbouring settlers to become bidders in such cases. Nor does it pay to remove the timber to a place where sale could be found for it; the consequence being that, in the majority of cases, it is left where seized and shortly afterwards disappears and cannot be traced. I have repeatedly, in past years, reported to the Government the necessity of taking more stringent measures for the enforcement of the law, if these offences are to be abated. The fining system, by placing an additional tax on timber cut in trespass, as we have seen, is ineffectual. A better plan would be to prosecute offenders under the Larceny Act. This procedure being far more reaching in its effect, would soon bring about a better observance of the regulations, and thus materially lessen the cost of administration.”

## LUMBER INTERESTS.

The year just closed has been an exceedingly active one for the lumberman, the sales having exceeded those of last year by upwards of 30,000,000 feet.

The increased demand for lumber is to be attributed principally to the improved financial condition of the settlers, who for the past two seasons have had good crops and have realized good prices for all products of the farm. Then again there is a growing spirit of contentment and a determination shown to make this western land home; a fact which is evinced in the permanent character of the improvements that are being made in buildings, etc.

The rapidly increasing population and the extension of railways were factors in swelling the amount of lumber and timber products sold to the enormous extent stated.

Hereunder I beg to give a comparative statement of quantities sold for the years 1897 and 1898, respectively, throughout Manitoba and in the Territories as far west as Regina.

	1897.	1898.
	Feet.	Feet.
Red and white pine from the Lake of the Woods, manufactured principally from logs brought from the State of Minnesota.....	45,000,000	53,000,000
Red and white pine from points lying east of Rat Portage, all cut from Canadian logs.....	10,500,000	13,000,000
Canadian spruce manufactured from timber cut in Manitoba.....	14,241,909	15,267,041
United States pine (manufactured) imported from the State of Minnesota..	18,871,104	35,751,960
British Columbia products.....	6,000,000	9,000,000
	92,613,013	126,019,001

## Department of the Interior.

It will be seen from the foregoing statement the importations of lumber from the United States have more than doubled in the past year, and have steadily increased in quantity since put on the free lists in 1893, as shown hereunder :—

Oct. 31st, 1892, to Oct. 31st, 1893.		Oct. 31st, 1893, to Oct. 31st, 1894.		Oct. 31st, 1894, to Oct. 31st, 1895.	
Dressed.	Undressed.	Dressed.	Undressed.	Dressed.	Undressed.
Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
180,306	1,174,747	647,588	3,073,195	1,108,268	5,668,250

Oct. 31st, 1895, to Oct. 31st, 1896.		Oct. 31st, 1896, to Oct. 31st, 1897.		Oct. 31st, 1897, to Oct. 31st, 1898.	
Dressed.	Undressed.	Dressed.	Undressed.	Dressed.	Undressed.
Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
2,103,857	9,853,883	1,913,832	14,857,272	4,219,438	31,532,522

With the increased facilities for shipping afforded by the numerous lines of railway with which this country is now supplied, the lumber trade cannot be controlled by a few firms, and the excessive prices which ruled in Manitoba a few years ago, can no longer be obtained. New sources of supply are being opened up, and the competition becomes keener year by year.

In the construction of the Crow's Nest and the South-Eastern Railways, respectively, (by the extension of the last named road to Northern Minnesota), enormously rich timber fields will be reached which up to the present time have hardly been touched. Lumber from these quarters will be an important factor in the trade within a short time.

### FUEL.

The following statement of the consumption of coal at points in Manitoba, and as far west as Moosejaw, in the West, can be taken as approximately correct :—

American anthracite . . . . .	Tons.
	24,000
Canadian do . . . . .	5,500
American soft . . . . .	1,500
Canadian do (Galt) . . . . .	8,000
Souris lignite . . . . .	21,000
	Cords.
Canadian wood, (Winnipeg only) . . . . .	65,000
United States, do do . . . . .	2,201

The following prices were obtained during the years 1897 and 1898, respectively, as shown hereunder :—

	1897. per ton.	1898. per ton.
American anthracite, f.o.b. at Winnipeg . . . . .	\$9 50	\$7 50
Canadian " " " . . . . .	9 00	6 75
American soft " " " . . . . .	6 50	6 00
Canadian " Galt, " " " . . . . .	6 00	7 00
" " Souris, " " " . . . . .	3 75	3 75

	1897. per ton.	1898. per ton.
Souris lignite, f.o.b. at Brandon . . . . .	3 50	3 20
“ “ “ Regina . . . . .	3 50	3 40
“ “ “ Melita . . . . .	3 25	2 80
“ “ “ Moosejaw . . . . .	3 25	3 20
Cordwood, poplar, “ Winnipeg . . . . .	2 50	2 50
“ pine, “ . . . . .	3 75	3 75
“ spruce, “ . . . . .	4 50	4 50

## PERMANENT TIMBER RESERVATION.

The disastrous effects of a policy of unconcern respecting the timber resources of the country which existed up to a few years ago, are clearly to be seen on every hand wherever timber existed.

The inspection recently made by yourself of the timber belts in Manitoba and the Territories where timber reserves have been established must, I am sure, have greatly impressed you with a sense of the responsibility of the governing powers, in seeing that for the future adequate protection against the ravages of fire and wanton waste by cutting be afforded to the timber remaining on the lands of the Crown.

Much has been done having that end in view during the past year in the way of constructing fire guards and placing competent men to act as fire guardians and do patrol work. No fires of any moment occurred in the timber during the year.

In view of your having so recently visited these reservations, I need not make an extended report. What is requisite is money to carry on the work until such times as the reservations become firmly established, when I feel sure, under proper management, they will be self supporting, and that in a few years their reproductive energy will be sufficient to provide for all legitimate demands.

These forest reservations are sure to prove a valuable asset to the people of this country and an object lesson as well ; and future generations will have cause to hold in grateful remembrance the names of the legislators to whose foresight and energy they owe so fair an inheritance.

## TREE CULTURE ON THE FARM.

Notwithstanding the prosperous condition of the settlers and the permanent character of their improvements, as previously mentioned, I regret to say that, with few exceptions, there has been little attempt made at tree culture by the farmers of this country. It can be readily understood that four or five years ago, with the depression then so keenly felt in this new country, the farming community were not so deeply concerned in tree culture as in the growing of such crops as yielded a more immediate return for their labour. But with the altered conditions, the splendid crops, good prices and ready markets ; in short, the general prosperity which now exists, giving rise to a feeling of buoyancy and hopefulness which has not hitherto existed, there is every reason for believing that in the near future a greater appreciation of the advantages of tree culture will be manifested on the part of the farming community. Within the last year or so the press in several parts of my district have been showing a commendable interest in arboriculture, which, if not immediately apparent in its results, cannot but have an educative influence of much value.

## MINING.

During the year 205 mineral claims have been recorded. These claims are situated on the east shore of Lake Winnipeg, and in the Hawk Lake district, in Townships 8 and 9, Range 16, east of the 1st Meridian.

Between \$15,000 and \$20,000 has been expended in sinking test pits, with the result in a number of cases of gold being found in paying quantities.

I am, Sir,

Your obedient servant,

E. F. STEPHENSON,

*Crown Timber Agent.*

Department of the Interior.

SCHEDULE A.

STATEMENT of Receipts from Timber, Grazing, Hay and Mining Lands, Winnipeg Agency, for the fiscal year ended 30th June, 1898.

Month.	TIMBER DUES.						GRAZING LANDS.				HAY LANDS.		Mining Fees and Free Miner's Certificates		Total.
	Bonus.	Ground Rent.	Royalty.		Permits.		Seizures.		School Lands.	Dominion Lands.	Dominion Lands.	School Lands.	Mining Fees and Free Miner's Certificates	Total.	
			§	cts.	§	cts.	§	cts.	§	cts.	§	cts.			
1897.															
July.		242 96	734 59	980 58	33 90										1,982 03
August.		348 24	2,022 23	1,511 07	21 71	1 50									3,904 75
September.	5 00	91 04	246 40	588 15	10 50										941 09
October.		81 85	2,845 24	1,374 53	2 00	110 75									4,414 37
November.		351 56	754 34	1,730 63	93 40										2,929 93
December.		523 42	880 83	1,294 52	15 00	98 00									2,811 77
1898.															
January.		645 78	2,376 02	1,268 42	187 04	20 25									4,497 51
February.		60 39	300 32	1,247 65	82 48	26 50				18 50		73 80	150 00		1,959 64
March.		20 22	260 16	865 01	90 13	36 75				56 50		49 50	60 00		1,458 27
April.		10 19	207 48	1,213 17	16 50	6 50				121 15		149 70	85 00		1,809 69
May.		78 08	213 94	825 49	2 40	79 00			9 60	68 05		114 85	120 00		1,511 41
June.		204 50	349 30	441 63	15 00		3 14			133 35		123 50	250 00		1,520 42
Received at Head Office.	5 00	2,658 23	11,190 85	13,360 85	570 06	379 25	3 14	9 60	397 55	511 35		665 00			29,750 88
Totals.	2,969 60	2,451 61		15 00	4 50										5,440 71
	2,974 60	5,109 84	11,190 85	13,375 85	574 56	379 25	3 14	9 60	397 55	511 35		665 00			35,191 59

E. F. STEPHENSON,  
Crown Timber Agent.

WINNIPEG, 29th November, 1898.



## SCHEDULE

SHOWING Number of Saw-Mills in the Province of Manitoba and District of  
30th June, 1897, and

Name of Owner or Owner and Assignee.	Mill, where Situated.	Kind of Power.	Horse Power.	Capacity per 12 hours.	Commenced Operations.	Location of Limit.	Description of Timber.	Quantity of Lumber manufactured for time ending 30th June, 1898.	Quantity sold from amount manufactured in 1898 and on hand 30th June, 1897.
					M.				
Peter McArthur.....	Fairford.....	Steam..	35	12	1889	Lake Manitoba..	T. & S.	550,000	897,320
Reimer, Loewen & Co..	Steinbach....	"	35	8	1892	Tps. 4 & 5, R. 9 E.	"		82,800
Drake & Co.....	Black Island	"	16	3	1889	Lake Winnipeg..	"	300,000	
Asessippi Milling Co..	Asessippi....	Water..	20	5	1882	Shell River.....	"	26,263	26,263
John A. Christie.....	Brandon.....	Steam..	80	35	1889	Stony Creek.....	"	3,169,828	
J. & H. McCorquodale..	Wassawa.....	"	20	5	1892	Tp. 1, R. 20 W..	"		
H. B. Mitchell.....	Selkirk.....	"	90	30	1891	Lake Winnipeg..	"	2,365,122	2,363,168
R. W. Gibson.....	Birtle.....	"	50	20	1880	Bird Tail Creek..	"	1,000,000	807,307
Isaac Riley.....	Grinds tone Point.....	"	30	16	1894	Lake Winnipeg..	"	817,938	817,938
John Pollock.....	Yorkton.....	"	16	3	1895	Tp. 32, R. 3, W. 2.	"		18,390
Thomas & Co.....	Pleasant Home.....	"	25	6	1892	Tp. 18, R. 3 E....	"	266,115	194,543
F. L. Engman.....	Scandinavia..	"	18	4	1893	Tp. 18, R. 17 W..	"	95,000	95,000
Wm. Robinson.....	Selkirk.....	"	30	10	1884	Lake Winnipeg..	"	2,756,583	2,066,220
Hooker & Co.....	Grinds tone Point.....	"	16	3	1892	"	"	420,276	310,016
George Kerr.....	Franklin.....	"	16	3	1891	Riding Mountain.	"		
Henry Roberts.....	Strathclair..	"	30	12	1892	"	"		13,592
Dauphin Lumber Co..	Dauphin.....	"	20	5	1890	Tp. 22, R. 20.....	"	573,000	259,203
Wm. Peden.....	Rosburn.....	"	45	12	1892	Tp. 21, R. 24.....	"		19,000
W. J. Manning.....	Balmoral....	"	20	5	1895	Tp. 19, R. 1 E....	"	290,000	282,000
Jas. Shaw.....	Dauphin.....	"	75	20	1890	Tp. 26, R. 25.....	"		
Charles Geikie.....	"	"	20	5	1892	Tp. 23, R. 19.....	"	810,802	443,387
Fairchild Co.....	Rapid City..	"	25	6	1878	Riding Mountain.	"	610,781	870,791
D. H. Harrison.....	Neepawa....	"	25	6	1894	Tp. 23, R. 18 W..	"	285,457	205,216
D. E. Sprague.....	Winnipeg....	"	75	25	1882	Rosseau River....	"	2,000,000	3,930,783
David Ross.....	Whitemouth	"	65	25	1891	Whitemouth R..	"		1,154,693
Finnson, Eyclfson & Co.	Icelandic R.	"	75	25	1895	Tp. 23, R. 3 E....	"	436,774	409,411
						Totals.....		16,773,939	15,267,041

## Department of the Interior.

B.

Assiniboia, operating under Government License, for the period between the 30th June, 1898.

Quantity of Lumber on hand on the 30th June, 1898.	Quantity of Shingles manufactured for time ending 30th June, 1898.	Quantity of Shingles sold from amount manufactured in 1898 and on hand 30th June, 1897.	Quantity of Shingles on hand 30th June, 1898.	Quantity of Laths manufactured for time ending the 30th June, 1898.	Quantity of Laths sold from amount manufactured in '98 and on hand 30th June, '97.	Quantity of Laths on hand 30th June, 1898.	Date of Last Return.	No. of Returns made.	Remarks.
190,797						M.	1898.		
							June 30.	11	20,200 ties sold.
							1897.		
		160,000					Dec. 31.	2	
							1898.		
300,000							June 30.	1	
							" 30.	4	
3,169,828							May 1.	4	2,730 cords of wood on hand.
							1897.		
							Dec. 31.	2	
							1898.		
12,972	800,000	740,000	60,000				June 30.	7	7,300 ties, 6,535 ft. boom timber
288,128		24,000			450	64,200	" 30.	5	46,298 ties sold. [sold.]
							" 30.	6	
							" 30.	4	
156,572	65,500	140,500					" 30.	10	2,136 posts sold.
							1897.		
	100,000	100,000					Dec. 31.	4	
							1898.		
1,275,124		13,500					June 30.	29	2,275 ties, 275 cords wood sold.
110,260							" 30.	4	
							1897.		
							Dec. 31.	2	
							1898.		
343,094		235,813					Mar. 31.	3	
							" 31.	4	
							1897.		
							Sept. 30.	1	
							1898.		
148,000							June 30.	4	
							" 30.	4	
501,553	118,000	136,250		24,200	24,200		" 30.	4	
120,367							" 30.	10	9,507 ties sold.
222,124		64,250					" 30.	4	802 feet oak sold.
3,006,629							" 30.	7	11,776 ties, 2,119 posts sold.
483,968							Mar. 31.	4	
100,000							June 30.	4	
10,428,416	1,083,500	1,614,313	60,000	24,200	24,650	64,200		144	

## SCHEDULE C.

GENERAL Office Return for the period between 30th June, 1897, and 30th June, 1898.

Description of Returns.	Number.	COMPARED WITH LAST YEAR.		Remarks.
		Increase.	Decrease.	
Number of letters written.....	10,024	2,584		
" circulars sent.....	567	10		
" letters received.....	11,959	3,701		
" circulars received.....	83	15		
" mill returns received.....	144		10	
" seizures made.....	67		39	
" permits (timber) issued.....	1,540	205		
" permits (hay) issued.....	606	174		

## DEPARTMENT OF THE INTERIOR,

## DOMINION LANDS OFFICE,

EDMONTON, 25th November, 1898.

The Secretary,  
Department of the Interior,  
Ottawa, Ont.

SIR,—I beg to enclose herewith statements "A" and "B" showing the transactions relating to the Crown Timber Branch of the agency business for the year ending 30th June last.

I am, Sir, Your obedient servant,

R. A. RUTTAN,

*Agent of Dominion Lands.*

A.—STATEMENT of Receipts from Timber, Grazing, Hay and Mining, at the Edmonton Office, for the twelve months ending 30th June, 1898.

Month.	Dominion Lands.		School Lands.		Total.	
	\$	cts.	\$	cts.	\$	cts.
1897.						
July.....	201	70	8	80	210	50
August.....	163	00	1	50	164	50
September.....	128	64	6	40	135	04
October.....	194	39			194	39
November.....	106	34			106	34
December.....	167	20			167	20
1898.						
January.....	188	75			188	75
February.....	2,383	78	6	40	2,390	18
March.....	2,602	08			2,602	08
April.....	2,756	71	48	00	2,804	71
May.....	2,082	76	7	30	2,090	06
June.....	773	20	12	00	785	20
Timber dues collected at Head Office.....	11,748	55	90	40	11,838	95
	1,116	00			1,116	00
	12,864	55	90	40	12,954	95

Department of the Interior.

SCHEDULE B.

RETURN of Saw-mills in the Edmonton Crown Timber Agency under Government License, during the year ended 30th June, 1898.

Name of Owner or Owner and Assignee.	Where Situate.	Kind of Power.	Number of horse-power.	Operations begun.	Logs cut at No. of Limit.	Quantity of lumber manufactured in period.	Quantity of lumber sold in period.	Date of last Return forwarded to Head Office.	Kind of Timber.	Number of Returns made.	Remarks.
D. R. Fraser.....	Edmonton.....	Steam...	30	1880	627 and 646	283,056	333,050	30th June '98	Spruce	8	
Walter and Humberstone	South Edmonton	"	60	1895	633 and 790	362,661	443,528	"	"	5	
Ottewell & Co.....	Beaver Hills.....	"	15	1897	674	134,000	94,000	"	"	4	
John Hall.....	Namao.....	"	15	1897	727	176,000	176,000	"	"	1	
Hudson's Bay Co.....	Athabasca Land- ing.	"	15	1898	787	139,194	76,202	"	"	2	
G. I. Clink.....	Lacombe.....	"	15	1898	800	11,221	11,221	"	"	1	
Total.....						1,106,132	1,134,001			21	

R. A. RUTIAN,  
Crown Timber Agent.

CROWN TIMBER OFFICE,  
CALGARY, 6th December, 1898.

The Secretary,  
Department of the Interior,  
Ottawa, Ont.

SIR,—I have the honour to enclose the following statements for the twelve months ended 30th June, 1898:—

Schedule "A," statement of receipts on account of Crown timber covering the period referred to, amounting to \$9,787.33.

Schedule "B," general office return.

Schedule "C," showing the saw-mills within the Crown Timber Agency operating under Government license to 30th June, 1898.

It will be observed that the revival in this business, as predicted in my report of last year, has materialized, the receipts having amounted to very much more than for the preceding twelve months.

I have the honour to be, Sir,

Your obedient servant

J. R. SUTHERLAND,  
*Agent.*

## Department of the Interior.

### A.—STATEMENT of Receipts from Timber, Grazing, Hay and Mining Lands, at the Calgary Office for the twelve months ended 30th June, 1898.

Month.	Dominion Lands.	School Lands.	Total.
1897.	\$ cts.	\$ cts.	\$ cts.
July.....	364 81	18 70	383 51
August.....	228 33	1 50	229 83
September.....	388 59	25 60	414 19
October.....	333 35		333 35
November.....	709 38		709 38
December.....	1,237 78		1,237 78
1898.			
January.....	508 19		508 19
February.....	178 35		178 35
March.....	639 05	25 60	664 65
April.....	250 62		250 62
May.....	1,707 74	15 50	1,723 24
June.....	4,212 18	85 25	4,297 43
Timber dues collected at Head Office.....	10,758 37 2,505 95	172 15	10,930 52 2,505 95
	13,264 32	172 15	13,436 47
Less \$1,305.56 collected during May, 1898, on account of the New Westminster Agency.....			1,305 56
Total.....			12,130 91

### SCHEDULE B.

#### GENERAL Office Return of the Calgary Crown Timber Agency for the twelve months ended 30th June, 1898.

Description of Return.	Number.	COMPARED WITH LAST YEAR'S REPORT.		Remarks.
		Increase.	Decrease.	
Number of letters written.....	2,882	About same...		Including Dominion Lands.
"    "    received.....	3,275			
Number of free permits used.....	236		58	"    "
Number of permits issued subject to dues.....	20	1		
Number mill returns received and verified.....	26	21		

J. R. SUTHERLAND,  
*Agent.*

## SCHEDULE C.

SHOWING: Number of Saw-Mills in the Calgary Crown Timber Agency, operating under Government License, for the period from 1st July, 1897, to 30th June, 1898.

No.	Name of Owner or Owner and Assignee.	Mill, where Situated.	Kind of Power.	Horse Power.	Commenced Operations.	Location of Limit.	Description of Timber.
1	Hon. Peter McLaren (Mountain Mills).	Mill Creek.....	Water.....	20	1882.....	Mill Creek.....	Spruce and fir.....
2	Hon. Peter McLaren (Macloed Mills).....	Macloed.....	Steam.....	40	1888.....	Old Man's River.....	Spruce and fir.....
3	Eau Clair & Bow River Lumber Co. ....	Calgary.....	Steam.....	175; 65 used	1887.....	Kananaskis River.....	Spruce, fir and eye-press pine.
4	R. G. Belvidere.....	Cardston.....	Steam.....	25	1891.....	St. Mary's River.....	Spruce and fir.....
5	John Lineham.....	Dewdney.....	Steam.....	50	1890.....	Sheep Creek.....	Spruce and fir.....
6	A. W. Gillingham.....	North Fork, Old Man's River....	Steam.....	25	1894.....	Old Man's River.....	Spruce and fir.....
7	D. Morrison.....	North and Middle Fork, Sheep-Creek.	Steam.....	25	1885.....	Sheep Creek .....	Spruce and fir.....

Department of the Interior.

SCHEDULE C.—Showing Number of Saw-Mills in the Calgary Crown Timber Agency, &c.—Concluded.

No.	Name of Owner or Owner and Assignee.	Quantity of Lumber manufactured for time ended 30th June, 1898.	Quantity sold from amount manufactured in 1898 and on hand 1st July, 1897.	Quantity of Lumber on hand on the 30th June, 1898.	Quantity of Shingles sold from amount manufactured and on hand 1st July, 1897.	Quantity of Shingles on hand 30th June, 1898.	Date of last Return.	Number of Returns made.	Remarks.
		Ft.	Ft.	Ft.	M.	M.			
1	Hon. Peter McLaren (Mountain Mills.)	85,040	333,422	125,000			June 30, 1898	6	{ Slabs, 5,104 pcs. Wood, 97 loads. Building timber, 1,052 pcs. Rails, 4,820 Canal poles, 1,125 Posts, 1,774
2	Hon. Peter McLaren (Macleod Mills.)	747,149	802,408	86,943	5,500		June 30, 1898	5	{ Building timber 378 pcs. Wood, 315 loads. Slabs, 11,122 pcs. Posts, 22
3	Bau Clair & Bow River Lumber Co.	2,091,859					June 1, 1898	1	{ Royalty paid on log measurement: 36,061 fence poles.
4	R. G. Belvidere	73,787	73,787		68,750		June 30, 1898	7	
5	John Lineham	1,986,434	1,783,443	502,491			March 31, 1898	8	{ Railway ties, 11,667. Wood, \$805.22. Slabs, \$339.30. Other products, \$382.17. Posts, \$20.42.
6	A. W. Gillingham			274,783			Dec. 31, 1895		
7	D. Morrison		14,000				June 30, 1898	1	
		5,004,269	3,117,060	994,717	74,250			28	

J. R. SUTHERLAND,  
Crown Timber Agent.



## CROWN TIMBER OFFICE,

PRINCE ALBERT, 30th December, 1898.

JAS. A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to enclose herewith the following statements for the year ended the 30th June, 1898 :—

Schedule "A," statement of receipts on account of Crown timber, grazing, hay and mining.

Schedule "B," statement showing saw-mills operating under Government licenses during the year.

Schedule "C," statement showing general official work during the year.

I have the honour to be, Sir,

Your obedient servant,

JNO. McTAGGART,  
*Crown Timber Agent.*

A.—STATEMENT of Receipts from Timber, Grazing and Hay Lands, at the Prince Albert Office, for the twelve months ending the 30th June, 1898.

Month.	Dominion Lands.	School Lands.	Total.
	\$ cts.	\$ cts.	\$ cts.
1897.			
July.....	250 19	2 50	252 69
August.....	156 92	40	157 32
September.....	137 22		137 22
October.....	42 23		42 23
November.....	748 56		748 56
December.....	634 96		634 96
1898.			
January.....	885 83	30 30	916 13
February.....	120 62	4 50	125 12
March.....	179 44	1 00	180 44
April.....	386 40	3 00	389 40
May.....	584 20	3 00	587 20
June.....	114 30	7 80	122 10
Totals.....	4,240 87	52 50	4,293 37
Amount collected at Head Office.....	1,504 93		1,504 93
Totals.....	5,745 80	52 50	5,798 30

Department of the Interior.

SCHEDULE B.

Showing Saw-Mills in Prince Albert operating under Government License during the year ended the 30th June, 1898.

Name of Owner.	Kind of Power.	Horse Power.	Capacity per 12 hours.	Commenced Operations.	Description of Timber.	Logs. — Cut.	Quantity of Lumber manu- factured during the year.	Feet.	Quantity of Lumber sold during the year.	Feet.	Quantity of Shingles manu- factured during the year.	M.	Quantity of Shingles sold during the year.	M.	Quantity of Laths manufac- tured during the year.	Quantity of Laths sold dur- ing the year.	Date of last Return.
James Sanderson	Steam	50	25,000	1898	Spruce, Pine, Tamarac and Poplar.	On Limits north of Saakatchewan River.	962,067	1,057,064	501	527	501	527	501	527	.....	.....	June 30th
B. McLeod	"	45	25,000	1898			.....	129,425	.....	.....	.....	.....	.....	.....	.....	.....	"
Total	.....	.....	.....	.....	.....	.....	962,067	1,186,489	501	527	501	527	501	527	.....	.....	.....

JOHN McTAGGART,  
*Crown Timber Agent.*

CROWN TIMBER OFFICE,  
PRINCE ALBERT, 30th December, 1898.

## SCHEDULE C.

General return for the year ended the 30th June, 1898, at the Crown Timber Office, Prince Albert:—

Timber permits issued.....	303
Hay “ “.....	137
Timber seizures . . . . .	17
Hay “ . . . . .	0
Mill returns received.....	6

JNO. McTAGGART,  
*Crown Timber Agent.*

CROWN TIMBER OFFICE,  
30th December, 1898.

CROWN TIMBER OFFICE,  
NEW WESTMINSTER, B.C., 9th Dec., 1898.

JAS. A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—In accordance with the request contained in Departmental letter of the 18th November last, No. 66110, I have the honour to submit my annual report for the twelve months which ended on the 30th of June, 1898.

The receipts of this office for the twelve months ended 30th June, 1898, amounted to \$21,081.26. Please add thereto any moneys which have been paid at the head office on account of royalty and ground rent on timber berths situated within the Dominion Railway Belt, in the province of British Columbia.

I also enclose you schedule of mills situated within the Dominion Railway Belt of British Columbia, as requested.

I am pleased to be able to report that, during the past year the volume of business has increased 30 per cent over the previous year, but the prices have not increased in proportion. This improvement in the lumber business has been largely due to the good crops in Manitoba and the North-West Territories and construction of the Crow's Nest Pass Railway.

The disastrous fire at New Westminster has also had an effect in increasing the local demand for lumber to be used for the purpose of reconstructing the buildings in the city.

The shingle business has also increased about 30 per cent, but the prices have not kept pace with the increased demand.

The export trade to foreign countries, namely, China, Japan, Australia, New Zealand and South America, has averaged about the same as the previous year, prices not being any better. The mills principally engaged in this business are the Moodyville and Chemainus mills, who do not take any of their timber from the Dominion Railway Belt.

The serious conflagration which occurred on the 10th and 11th September last destroyed our office, among other public offices in this city. The work of reconstruction, however, has been rapidly pushed forward, and the city is again assuming its business-like aspect. This condition of affairs reflects great credit on the enterprise of our citizens.

A very serious loss was experienced by the British Columbia Mills Timber and Trading Company, by the destruction by fire of their Hastings mill, situated in the city of Vancouver. This occurred on the night of the 25th of October last. The burning of

## Department of the Interior.

this mill will have a serious effect on the export trade, as it was largely engaged in that particular line of business. It is not definitely settled as to when the mill will be rebuilt.

The whole respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

**JAMES LEAMY,**  
*Crown Timber Agent.*

### A.—STATEMENT of Receipts on account of Crown Timber Dues at the New Westminster Office, for the twelve months ended 30th June, 1898.

Month.	New Westminster.	Head Office.	Total.
1897.	\$ cts.	\$ cts.	\$ cts.
July .....	1,886 78	321 81	2,208 59
August .....	431 92	1,032 98	1,464 90
September .....	1,338 30	75 66	1,413 96
October .....	743 55	31 85	775 40
November .....	3,077 09	90 90	3,167 99
December .....	212 73	1,422 32	1,635 05
1898.			
January .....	1,575 03		1,575 03
February .....	511 72	619 91	1,131 63
March .....	749 09	5 81	754 90
April .....	1,237 78	107 75	1,345 53
May .....	864 61	1,346 00	2,210 61
June .....	1,388 65	703 46	2,092 11
	14,017 25	5,758 45	19,775 70
Add \$1,305.56, collected at Calgary during May, 1898, on account of this agency.....			1,305 56
Total .....			21,081 26

## List of Mills operating in Dominion Railway Belt of British Columbia.

Name of Owner.	Where Situated.	Capacity of Mill.	Remarks.
		Ft.	
Reilly, I. R. & T. S. ....	Ottertail.....	7,000	Steam power.
Wells, W. C. ....	Palliser .....	20,000	"
Columbia River Lumber Co. ....	Golden .....	25,000	"
" .....	Beaver.....	52,000	Water power.
Robinson, Fred. ....	Revelstoke.....	15,000	Steam power.
Genelle, P. & Co. ....	Nakusp.....	30,000	"
Magee, J. A. ....	Lardeau.....	20,000	"
Genelle, Jos. ....	Kualt .....	25,000	"
Shuswap Milling Co. ....	Kamloops.....	10,000	Steam power. Shingle mill at Greely Ck, water p., 50 M shingles per day.
Finney, Geo. ....	Marble Cañon.....	5,000	Steam power.
Martin Bros. ....	Harrison River.....	15,000	"
Canadian Co-operative Society. ....	Ruskin.....	25,300	Steam power. Since assigned for benefit of creditors.
Huntingdon Lumber Co. ....	Huntingdon .....	50,000	Steam power.
McLaren & Ross. ....	Millside Station.....	120,000	"
Brunette Saw Mill Company. ....	Sapperton.....	70,000	"
B. C. Mills T. & T. Co. ....	New Westminster.....	90,000	"
" .....	Vancouver.....	225,000	"
Grant & Kerr. ....	Ladner .....	10,000	"
Pacific Coast Lumber Co. ....	Lulu Island.....	40,000	Steam power. Shingle mill cuts 120 M shingles per day.
J. & A. Tretheway. ....	Chilliwack.....	8,000	Water power.
Burrard Inlet Red Cedar Lumber Co. ....	Port Moody.....	75,000	Steam power. Shingle mill cuts 75 M shingles per day.
E. H. Heaps & Co. ....	Vancouver.....		Steam power. Shingle mill cuts 75 M shingles per day.

# Department of the Interior.

## No. 5.

DEPARTMENT OF THE INTERIOR,  
ORDNANCE AND ADMIRALTY LANDS BRANCH, 20th January, 1899.

JAS A. SMART, Esq.,  
Deputy Minister of the Interior.

SIR,—I have the honour to submit the usual report in relation to the work of this branch during the fiscal year ended the 30th June, 1898.

The statements annexed are :

(a.) Statement of sales made since the preparation of the last report.

Total amount \$16,844.57, of which sum \$14,897.37 has been received on account.

(1.) In Nepean 21 lots, 33 by 115.69 feet, situate at Rideauville, a suburb of the city of Ottawa, were sold by public auction for a total sum of \$2,434 upon the usual terms governing Ordnance Lands sales, namely, one-fifth down and the balance in four equal annual instalments with interest at six per cent per annum. The average price realized was \$115.90 per lot, or \$1,281 per acre, which must, I think, be considered satisfactory.

(2.) At Ottawa lot No. 32, North Bolton street, was sold by public auction for \$605 and the amount paid in full. This was offered for sale in 1890, and could not then be sold for \$500. The consideration money \$1,805.57 for eight other lots in the city of Ottawa has been paid and letters-patent have been issued in accordance with the terms of the original leases granted by the Imperial authorities.

(3.) Under the authority of an Order in Council, dated 9th May, 1898, 18.28 acres of the Garrison Common in the city of Toronto, formerly occupied by the Canadian Pacific Railway Company as part of and in connection with its right-of-way, were transferred from the Department of Militia and Defence to this Department and sold to the Company for the sum of \$12,000 cash.

By an Order in Council dated 24th June, 1898, authority was granted to extend the date of the payment for five years from the 1st of April, 1897, of the purchase money (\$52,000) agreed upon by the City of Toronto for 6.03 acres required for the enlargement of the Western Cattle market in that city, the interest payable in the meantime to be at the rate of three per cent per annum.

In the Township of Charlotteville, Ontario, the Ordnance Lands remaining undisposed of, being parts of Lots No. 10 and 11 Broken Front Concession, were leased to Walter J. McGill McInnis for ten years from the 1st June, 1898, at \$23.10 per annum.

(b.) Statement showing localities on account of which moneys have been received during the fiscal year. Total amount, \$22,543.17, or an increase of \$12,970.40 over the receipts of the previous year. The contingent and other outside expenses of the branch for the corresponding period were \$877.95.

(c.) Statement showing the receipts, month by month, divided into principal, rent or interest, and fees.

(d.) Statement showing the amounts due and remaining unpaid, 30th June, 1898, in the several localities where Ordnance Lands are situated, classified as rent or interest and principal moneys. The total amount shown to be due is \$33,758.46, a decrease when compared with 1897 of \$51,946.12. This reduction, however, is due to the arrangement, before mentioned, made with the City of Toronto, by which the time for payment of the sum of \$52,000 has been extended to 1st April, 1902.

Of the amount remaining unpaid by tenants, \$15,750 is due by the Government of the Province of Quebec, and \$5,641.73 by lessees of Ordnance Lands in the city of Ottawa.

During the year 408 letters were received, 557 letters written, and upwards of 1,200 notices and statements of accounts prepared and mailed to tenants and purchasers in arrears; 36 assignments were registered, 24 drafts of letters patent were prepared and 100 warrants issued for the Bank of Montreal at Ottawa to receive moneys. In addition to these upwards of 600 accounts now open with the respective purchasers and tenants of Ordnance Lands have been carefully kept.

I have the honour to be, Sir,

Your obedient servant,

PERLEY G. KEYES,  
*Clerk in charge.*

A.—STATEMENT of Sales made during the year ended 30th June, 1898.

Locality.	Number of Lots Sold or Redeemed.	Amount Sold for.	Amount Received on Account.
		\$ cts.	\$ cts.
Nepean .....	21 lots (33 × 115·69 ft.).....	2,434 00	486 80
Ottawa.....	8 lots redeemed, 1 lot sold.....	2,410 57	2,410 57
Toronto.....	18·28 acres.....	12,000 00	12,000 00
	Total .....	16,844 57	14,897 37

P. G. KEYES,  
*Clerk in charge.*

DEPARTMENT OF THE INTERIOR,  
ORDNANCE AND ADMIRALTY LANDS BRANCH  
OTTAWA, 18th January, 1899.

## Department of the Interior.

B.—STATEMENT showing the several localities on account of which moneys have been received during the fiscal year ended 30th June, 1898.

Locality.	Amount.	Locality.	Amount.
	\$ cts.		\$ cts.
Amherstburg.....	2 00	Brought forward .....	5,899 49
Burlington Beach .....	80 00	Oxford .....	1 20
Chambly .....	65 81	Point Pelee .....	332 73
Edmundston .....	52 94	Prescott.....	81 84
Elmsley .....	7 60	Presqu'Isle.....	0 50
Greenville .....	2 20	Quebec.....	30 00
Grand Falls.....	38 02	Sarnia .....	40 00
Kingston .....	245 00	Shelburne, N.S.....	30 00
Longueuil .....	2 00	Sorel.....	70 04
Fort Cumberland, N.B.....	45 00	St. Joseph's Island .....	2 60
Nepean .....	486 80	South Crosby.....	14 12
Niagara.....	273 87	Toronto .....	15,900 00
Oromocto, N.B.....	0 25	Wolford.....	63 65
Ottawa .....	4,573 00	Registration and office fees.....	76 00
Owen Sound .....	25 00		
Carried forward.....	5,899 49	Total .....	22,543 17

P. G. KEYES,  
*Clerk in charge.*

DEPARTMENT OF THE INTERIOR,  
ORDNANCE AND ADMIRALTY LANDS BRANCH,  
OTTAWA, 18th January, 1899.

C.—STATEMENT of Receipts on account of Ordnance and Admiralty Lands for the fiscal year ended 30th June, 1898.

Month.	Fees.	Rent or Interest.	Principal.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1897.				
July.....	12 00	581 41	561 50	1,154 91
August .....	2 00	280 76	990 00	1,272 76
September.....		307 89	74 16	382 05
October .....	8 00	517 57	105 00	630 57
November.....	20 00	176 42	18 75	215 17
December .....	4 00	2,836 19	332 97	3,173 16
1898.				
January .....	10 00	173 46	12 56	196 02
February .....		72 05		72 05
March.....		152 07	150 00	302 07
April.....	4 00	1,352 26		1,356 26
May .....	8 00	315 88	589 88	913 76
June .....	8 00	700 56	12,165 83	12,874 39
Total .....	76 00	7,466 52	15,000 65	22,543 17

P. G. KEYES,  
*Clerk in charge.*

DEPARTMENT OF THE INTERIOR,  
ORDNANCE AND ADMIRALTY LANDS BRANCH,  
OTTAWA, 18th January, 1899.



D.—STATEMENT showing the amounts due and remaining unpaid 30th June, 1898, on account of rent and instalments of purchase money and interest.

Locality.	Rent or Interest due and unpaid 30th June, 1898.	Amount of Instalments due & unpaid 30th June, 1898.	Total due.
	\$ cts.	\$ cts.	\$ cts.
Beaver Harbour.....	0 25		0 25
Carillon.....	3 00		3 00
Chambly.....	820 64	1,046 43	1,867 07
Edmundston.....	69 03	319 77	388 80
Elmsley.....	2 10		2 10
Fort Cumberland.....	159 00		159 00
Grand Falls.....	656 38	675 10	1,331 48
Kingston.....	209 08	1,460 96	1,670 04
Montreal.....	45 33	113 63	158 96
Marlborough.....	42 00		42 00
Nepean.....	135 04		135 04
Niagara.....	10 00		10 00
Owen Sound.....	31 50		31 50
Ottawa.....	5,641 73	392 00	6,033 73
Oromocto.....	0 25		0 25
Presqu' Isle, N.B.....	0 50		0 50
Pittsburg.....	1 44	6 00	7 44
Pomroy Bridge.....	4 25		4 25
Point Pelee.....	400 00		400 00
Quebec.....	17,155 12	3,584 00	20,739 12
Sorel.....	272 48		272 48
Shelburne.....	61 00		61 00
Ste. Croix.....	3 82		3 82
Turkey Point.....	23 10		23 10
Vespra.....	92 38	250 00	342 38
Wolford.....	71 15		71 15
Totals.....	25,910 57	7,847 89	33,758 46

P. G. KEYES,

*Clerk in charge.*

DEPARTMENT OF THE INTERIOR,

ORDNANCE AND ADMIRALTY LANDS BRANCH,

OTTAWA, 18th January, 1899.

Department of the Interior.

No. 6.

LAND PATENTS BRANCH,  
OTTAWA, 24th January, 1899.

JAS. A. SMART, Esq.,  
Deputy Minister of the Interior.

SIR,—I have the honour to enclose herewith the following statements necessary in the preparation of the Departmental report for the year ended the 30th June last. Some of these statements are brought down to the 30th June last, while the others are brought down to the end of the calendar year, and are as follows:—

*To the 30th June, 1898.*

- A. Statement of entries made at head office.
- B. Statement showing number of acres of swamp lands in Manitoba transferred by Order in Council to Province of Manitoba.
- C. Statement showing number of patents forwarded to the several Registrars ; and the number of notifications inailed to patentees.
- D. Statement showing number of deeds of transfer recorded at head office.

*To the 31st December, 1898.*

- E. Statement of homestead and sales entries made at the several agencies of the Department during the calendar years 1897 and 1898 respectively.
- F. Statement showing number of entries cancelled.
- G. Statement abstract of letters-patent covering Dominion Lands in Manitoba, North-west Territories and British Columbia, issued from the Department of the Interior during the calendar years 1897 and 1898 respectively.

I have the honour to be, Sir,

Your obedient servant,

WM. M. GOODEVE,  
*Chief Clerk, Land Patents Branch.*

A.—STATEMENT of Entries affecting Dominion Lands which were made at Head Office during the fiscal year ended 30th June, 1898.

Special Grants.		Hudson's Bay Co.		Canadian Pacific Ry. Co.		Manitoba & N.W. Ry. Co.		Manitoba S. W. Col. Ry. Co.		Calgary & Edmonton Ry. Co.		Qu'Appelle Long Lake & Sask. R. & S. Co.		Railway Right of Way.		Total.	
No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.
32	1,537	7	24,990	492	105,150	26	4,145	98	20,276	10	2,758	1	160	145	10,810	811	169,826

W. M. GOODEVE,  
Chief Clerk, Land Patents Branch.

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 24th January, 1899.

B.—STATEMENT showing the number of acres of swamp lands in Manitoba transferred by Order in Council to the Province of Manitoba up to the 30th June, 1898.

	Acres.
By Order in Council of 21st April, 1884.....	104,740
do 16th April, 1888.....	52,600
do 7th June, 1888.....	60,335
do 25th August, 1891.....	105,635
do 7th December, 1891.....	36,479
do 22nd April, 1893.....	69,680
do 21st October, 1893.....	13,040
do 4th October, 1895.....	50,602
do 31st October, 1896.....	53,520
do 31st October, 1896.....	6,960
do 10th November, 1896.....	137,016
do 1st December, 1896.....	117,250
do 18th June, 1897.....	151,985
do 27th June, 1898.....	3,120
Total.....	962,962

W. M. GOODEVE,  
Chief Clerk, Land Patents Branch,

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 20th January, 1899.

## Department of the Interior.

C.—STATEMENT showing the number of patents forwarded to the several Registrars of the Land Registration Districts of the North-West Territories and the number of notifications mailed to patentees during the year ended the 30th June, 1898.

Registration Districts.	Number of Patents sent Registrars.	Number of Notifications mailed to Patentees
Assiniboia.....	669	745
East Saskatchewan.....	61	75
West do .....	10	16
North Alberta.....	431	450
South do .....	273	301
Totals.....	1,444	1,587

WM. M. GOODEVE,  
*Chief Clerk, Land Patents Branch.*

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 24th January, 1899.

D.—STATEMENT showing the number of Deeds of Transfer recorded at Head Office during the year ended 30th June, 1898.

Number of Deeds registered.....	307
Fees received in connection therewith.....	\$696 01

WM. M. GOODEVE,  
*Chief Clerk, Land Patents Branch.*

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 24th January, 1899.

E.—The following is a comparative statement of the Homestead entries and sales which have been made at the several Agencies of the Department during the calendar years 1897 and 1898, respectively :—

	Calendar year 1897.		Calendar year 1898.	
	No. of entries.	Acres.	No. of entries.	Acres.
Homesteads.....	2,384	381,440	4,848	775,680
Sales.....		22,336		47,186

WM. M. GOODEVE,  
*Chief Clerk, Land Patents Branch.*

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 20th January, 1899.

F.—STATEMENT showing the number of Entries cancelled during the calendar year 1898, also the year in which such Entries were made.

Year.	Homesteads.	Pre-emptions.	Pre-emption Sales.	Time Sales.	Sales.
1877.....	2	2			
1878.....	3	2			
1879.....	3	3		20	1
1880.....	1	4		182	
1881.....		3		13	
1882.....	9	52			1
1883.....	16	72	1	2	1
1884.....	16	48	4	1	1
1885.....	7	27	7	1	1
1886.....	13	20	1	1	
1887.....	8	24	1		
1888.....	23	18	4	3	1
1889.....	79	107	4	8	2
1890.....	37		3	5	
1891.....	87			5	
1892.....	198		2	2	
1893.....	179		1		
1894.....	154			2	
1895.....	189		3	1	
1896.....	133		2		
1897.....	234		1	4	
1898.....	155			6	
	1,546	382	34	256	8

W. M. GOODEVE,  
Chief Clerk, Land Patents Branch.

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 21st January, 1899.

## Department of the Interior.

G.—ABSTRACT of Letters Patent covering Dominion Lands situate in Manitoba, the North-West Territories and British Columbia, issued from the Department of the Interior during the calendar years 1897 and 1898.

Number.	Nature of Grant.	1897.		1898.	
		Number of Patents.	Number of Acres.	Number of Patents.	Number of Acres.
1	Homesteads.....	1,960	296,122	1,784	282,445
2	Sales.....	191	25,446	172	38,625
3	British Columbia homesteads.....	33	4,375	29	3,882
4	"    sales.....	20	1,056	22	2,306
5	Canadian Pacific Railway nominees.....	189	37,089	388	79,811
6	"    "    grants.....	71	32,940	94	16,674
7	"    "    road-bed and station grounds.....				
8	Half-breed allotments.....	11	978	19	1,625
9	North-West Half-breed grants.....	168	40,320	2	480
10	Manitoba Act grants.....	4	558	3	400
11	Special grants.....	16	1,307	6	550
12	Commutation grants.....	83	20,729	26	2,591
13	Manitoba North-Western Railway.....	14	939	14	1,216
14	Manitoba South-Western Colonization Railway.....	21	3,687	52	13,593
15	Hudson's Bay Company.....	61	11,140	91	16,362
16	Military Homesteads.....	3	5,483	1	320
17	School Lands sales.....	33	10,073	21	6,356
18	Parish sales.....	30	4,754	26	4,307
19	Coal Land sales.....	5	426	2	161
20	Coal Land sales.....	2	176	1	9
21	Foreshore rights.....			1	
22	Assignments of mortgage.....	2			
23	North-Western Coal and Navigation Company, Alberta Railway and Coal Company.....	5	37	20	20,346
24	Calgary and Edmonton Railway Company.....	48	2,024	26	3,471
25	Mineral rights.....	2	200	1	39
26	Mining Lands sales.....			1	57
27	Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company.....			4	953
28	The University of Manitoba.....			230	149,935*
	Fruit Tree Culture.....			1	157
	Total.....	2,972	499,859	3,037	646,671

W. M. GOODEVE,  
*Chief Clerk, Land Patents Branch.*

DEPARTMENT OF THE INTERIOR,  
LAND PATENTS BRANCH,  
OTTAWA, 24th January, 1899.

## No. 7.

DEPARTMENT OF THE INTERIOR,  
CORRESPONDENCE REGISTRATION BRANCH,  
OTTAWA, 24th December, 1898

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to submit herewith a statement showing the work of this Branch for the fiscal year ended 30th June last.

During that period the Office of the Commissioner of Dominion Lands was removed from Winnipeg to Ottawa, and the records connected therewith placed under my charge. In accordance with instructions received from you, as new correspondence came in, the Commissioner's records were examined and if any papers were found having any relation thereto, they were transferred and became a part of the Departmental record; the result being that about fifteen thousand (15,000) files have been so amalgamated.

I have the honour to be, Sir,

Your obedient servant,

K. J. HENRY,  
*Registrar.*

STATEMENT of work done in the Office of the Registrar of Correspondence during the year ended 30th June, 1898.

	1st July to 31st December, 1897.	1st Jan. to 30th June, 1898.	Total.
Letters received.....	24,780	24,063	48,843
do sent.....	26,950	38,817	65,767
Registered letters received.....	1,148	2,176	3,324
do sent.....	2,715	4,121	6,836
Totals.....	55,593	69,177	124,770

MONEYS RECEIVED.

	1st July to 31st December, 1897.	1st Jan. to 30th June, 1898.	Totals.
	\$ cts.	\$ cts.	\$ cts.
Cash.....	6,413 32	6,512 05	12,925 37
Cheques.....	38,441 67	255,870 14	294,311 81
Scrip.....	4,500 09	7,811 42	12,311 51
Money Orders.....	5,807 58	7,960 96	13,768 54
Totals.....	55,162 66	278,154 57	333,317 23
Corresponding totals for previous year.....	38,205 95	54,421 74	92,627 69
Difference in favour of 1897-98.....	16,956 71	223,732 83	240,689 54

# Department of the Interior.

No. 8.

DEPARTMENT OF THE INTERIOR,

ACCOUNTS BRANCH, OTTAWA, 20th Jan., 1899.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to submit Statements of Revenue collected from various sources during the fiscal year 1897-98, as follows:—

A. Dominion Lands, including Yukon Territory . . . .	\$1,009,741 63
B. Ordnance Lands . . . . .	22,537 17
C. Registration Fees, N.W.T. . . . .	14,263 50
D. School Lands . . . . .	52,410 80
E. Fines and Forfeitures, N.W.T. . . . .	529 06
F. Casual Revenue . . . . .	260 92
G. Seed Grain Repayments . . . . .	12,351 71

A Statement of the Revenue on account of Dominion Lands (marked H) shows the receipts monthly classified under different sub-heads.

A comparative Statement of Receipts on account of Dominion Lands, marked I, shows that the revenue during 1897-98 was \$802,888.06 more than in the preceding year. A large proportion of the increase, amounting to \$729,623.59, is attributable to the development of the Yukon Territory, at the same time there has been an increase of about thirty-five per cent in the revenue from the Dominion Lands and Crown Timber Agencies in Manitoba and the North-West Territories, the receipts for Homestead Entry fees and from general sales of lands being much heavier than in 1896-97.

The revenue collectable by the Department from other sources has increased as follows:—

	1896-97.	1897-98.
	\$ cts.	\$ cts.
Ordnance Lands . . . . .	9,836 88	22,537 17
Registration Fees, N.W.T. . . . .	10,204 74	14,263 50
School Lands . . . . .	24,292 43	52,410 80
Seed Grain Repayments . . . . .	9,887 13	12,351 71

I have the honour to be, Sir,

Your obedient servant,

CHAS. H. BEDDOE,  
*Acting Accountant.*



A.—STATEMENT of Receipts on account of Dominion Lands for the fiscal year ended  
30th June, 1898.

Particulars.	Cash.		Scrip.		Total.	
	\$	cts.	\$	cts.	\$	cts.
Yukon District—						
Sales of land.....	\$	6,584 00				
Survey fees.....		1,460 00				
Map sales, office fees, &c.....		623 00				
Liquor permits.....		940 00				
Hay dues.....		29 50				
Timber dues.....		43,911 71				
Rents from dredging leases.....		133,005 50				
Mining fees.....		145,263 94				
On account of royalty, &c.....		287,423 55				
		619,241 20			619,241 20	
Free miners' certificates.....		116,243 89			116,243 89	
Dominion Lands Agencies—						
Battleford.....		65 00			65 00	
Calgary.....		7,284 81	3,707 61		10,992 42	
Alameda.....		5,151 74			5,151 74	
Edmonton.....		10,881 43	499 83		11,381 26	
Kamloops.....		12,843 59			12,843 59	
Lethbridge.....		13,079 23	3,982 90		17,062 13	
Minnedosa.....		6,720 98			6,720 98	
New Westminster.....		5,075 47	408 02		5,483 49	
Prince Albert.....		1,788 45	26 66		1,815 11	
Regina.....		15,708 60	827 61		16,536 21	
Red Deer.....		2,456 96			2,456 96	
Brandon.....		18,508 38	7,082 71		25,591 09	
Swift Current.....		500 00	480 00		980 00	
Yorkton.....		2,335 37	613 32		2,948 69	
Dauphin.....		7,744 22	1,797 83		9,542 05	
Winnipeg.....		15,583 21	9,491 65		25,074 86	
Crown Timber—						
Winnipeg.....		33,225 70			33,225 70	
New Westminster.....		21,061 26			21,061 26	
Prince Albert.....		4,886 25			4,886 25	
Calgary.....		9,133 07			9,133 07	
Edmonton.....		3,025 02			3,025 02	
Battleford.....		245 13			245 13	
Alameda.....		12 80			12 80	
Dauphin.....		614 30			614 30	
Kamloops.....		1 00			1 00	
Minnedosa.....		767 93			767 93	
Lethbridge.....		33 00			33 00	
Regina.....		74 25			74 25	
Red Deer.....		30 35			30 35	
Swift Current.....		1 00			1 00	
Brandon.....		2,133 89			2,133 89	
Yorkton.....		137 12			137 12	
Rocky Mountains Park of Canada.....		3,045 65			3,045 65	
Grazing lands.....		4,728 58	510 39		5,238 97	
Coal lands.....		401 53			401 53	
Stone quarries.....		111 00			111 00	
Hay lands.....		6,691 14			6,691 14	
Mining lands (not including Yukon revenue nor free miners' certificates).....		10,264 71			10,264 71	
Map sales, office fees, &c.....		1,143 91			1,143 91	
Fees re application for patents.....		5,295 00			5,295 00	
Survey fees.....		11,547 91			11,547 91	
Patent fees, Head Office.....		140 00			140 00	
Over-deposits.....		2 22			2 22	
Rentals.....		359 60			359 60	
Foreshore fees.....		2 00			2 00	
Refund cheques, not used.....		7 00			7 00	
Examination fees, Dominion Land Surveyors.....		10 00			10 00	
Irrigation fees.....		48 25			48 25	
Total.....		980,313 10	29,428 53		1,009,741 63	

CHAS. H. BEDDOE, *Acting Accountant.*

DEPARTMENT OF THE INTERIOR, ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

## Department of the Interior.

### B.—STATEMENT of Receipts on account of Ordnance Lands for the fiscal year ended 30th June, 1898.

Month.	Amount.	Total.
1897.		
	\$ cts.	\$ cts.
July .....	1,140 63	
August .....	1,281 04	
September .....	382 05	
October .....	630 57	
November .....	191 17	
December .....	3,197 16	
1898.		
January .....	196 02	
February .....	72 05	
March .....	302 07	
April .....	1,334 59	
May .....	913 76	
June .....	12,896 06	
		22,537 17

**CHAS H. BEDDOE,**  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

### C.—STATEMENT of Receipts on account of School Lands for the fiscal year ended 30th June, 1898.

School District.	Amount.	Total.
	\$ cts.	\$ cts.
Manitoba .....	50,965 15	
Assniboia .....	703 39	
Alberta .....	689 76	
Saskatchewan .....	52 50	
		52,410 80

**CHAS. H. BEDDOE,**  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

D.—STATEMENT of Fees received from the Registrars in the North-West Territories for the fiscal year ended 30th June, 1898.

Registration District	Amount.	Total.
	\$ cts.	\$ cts.
Assiniboia.....	7,411 33	
North Alberta.....	2,485 45	
South Alberta.....	3,526 85	
East Saskatchewan.....	737 50	
West Saskatchewan.....	102 37	
		14 263 50

CHAS. H. BEDDOE,  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

E.—STATEMENT of Receipts on account of Fines and Forfeitures in the North-West Territories for the fiscal year ended 30th June, 1898.

Date.	Through Whom Paid.	Amount.	Total.
		\$ cts.	\$ cts.
1897.			
June 11.....	His Honour, Lieut.-Governor of North-West Territories.....	10 20	
Oct. 25.....	" " " " " ".....	359 71	
Dec. 29.....	" " " " " ".....	159 15	
			529 06

CHAS. H. BEDDOE,  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

## Department of the Interior.

### F.—STATEMENT of Casual Revenue for the fiscal year ended 30th June, 1898.

Name.	Particulars.	Amount.
		\$ cts.
Land Commissioner	Cheque No. 8 of 26th Feb., 1895, not used	15 00
G. A. Stewart	Lumber sold	3 47
A. D. L., Edmonton	Proceeds of sale of old stove	15 50
do do	do Wetaskiwin office furniture	30 50
Immigration Commissioner	Refund, account potatoes	2 60
do do	do supplies to Galicians	4 70
do do	do do	4 70
do do	do railway fares	2 10
North-West Mounted Police	do Immigration cheque 5700, not used	40 00
Immigration Commissioner	do railway fares	9 20
do do	Proceeds of sale of old typewriter	25 00
A. D. L., Dauphin	Refund <i>re</i> farm cases, &c.	10 00
M. Jerome	<i>Re</i> exchange of horses	5 00
W. L. Griffith	Refund, account travelling expenses 1896-97	43 15
J. R. Thompson	Proceeds of sale of horses	50 00
		260 92
Repayments *	Relief mortgages of 1876	1,398 04
do *	Seed grain advances of 1894	3,227 36
do *	Seed grain advances of 1896	2,343 54

\* The above three items appear on Statement (G) of Repayment of Seed Grain Advances.

CHAS. H. BEDDOE,  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

### G.—STATEMENT showing Seed Grain and Relief Mortgage Repayments for the fiscal year ended 30th June, 1898.

Seed Grain Advances of 1896.	Seed Grain Advances of 1895.	Seed Grain Advances of 1894.	Seed Grain to Settlers, Account 1890.	Territorial Account, 1886-88.	Relief Mortgages of 1876.	Total.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
2,343 54	3,032 18	3,227 36	1,078 56	1,272 03	1,398 04	12,351 71

CHAS. H. BEDDOE,  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

H.—STATEMENT OF Receipts on account of Dominion Lands for the fiscal year ended 30th June, 1898.

Month.	Homestead Fees.	Inspection Fees, &c.	Cancellation Fees.	Improvements.	General Sales of Lands.	Timber Dues.	Rents from Grazing Lands.	Hay Permits, Mining Fees, Coal Lands and Stone Quarries.	Surveyors' Examination Fees.	Rocky Mountains Park of Canada.	Map Sales, Office Fees, &c.	Survey Fees.	Fees re Application for Patents.	Miscellaneous.	Total.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
1897.																
July	1,820 00	160 00	325 00	354 49	3,601 87	4,533 91	259 74	1,890 16		154 75	36 30	178 94	290 00	11 00	13,616 96	
August	1,830 00	242 00	465 00	265 53	3,714 18	6,812 94	173 81	543 70		296 30	182 89	84 95	360 00	95 00	15,086 30	
September	1,740 00	200 00	200 00	354 50	9,898 08	3,068 90	264 80	9,460 60	10 00	374 50	46 75	1,434 79	320 00	507 11	27,680 03	
October	2,110 00	230 00	435 00	218 50	6,808 39	6,088 29	981 39	263 20		374 50	69 00	111 51	565 00		18,252 78	
November	2,630 00	225 00	660 00	877 41	6,234 48	8,482 48	367 57	3,072 20		172 88	103 35	363 22	737 50	100 50	24,027 19	
December	1,690 00	190 00	415 00	533 55	8,159 77	7,598 80	387 83	229 35		72 00	52 06	3,891 19	620 00	834 36	24,673 91	
1898.																
January	1,820 00	185 00	515 00	503 21	5,786 66	18,015 12	177 75	2,693 45		381 67	115 20		430 00	47 50	30,670 56	
February	1,630 00	185 00	425 00	334 25	6,351 56	12,861 99	398 61	162,730 49		341 42	708 19	3,540 42	375 00	96 00	189,977 93	
March	2,550 00	190 00	705 00	314 25	5,566 86	18,746 76	413 12	125,601 13		114 50	248 76		282 50	491 00	155,313 88	
April	3,990 00	360 00	935 00	849 96	5,821 79	16,625 29	188 72	20,589 24		293 38	150 82	1,666 40	315 00	49 50	51,745 10	
May	6,920 00	295 00	1,040 00	660 83	8,305 85	9,099 98	590 57	72,024 26		160 25	140 00	1,170 34	560 00	93 38	101,030 46	
June	6,250 00	315 00	1,015 00	383 15	9,909 15	7,351 32	624 17	300,207 48		429 50	133 48	566 15	500 00	553 60	323,238 00	
Sept.	34,780 00	2,777 00	7,265 00	5,649 63	80,178 64	119,313 78	4,758 08	699,305 26	10 00	3,045 65	1,987 40	13,007 91	5,355 00	2,879 75	980,313 10	
					28,918 14		510 39								29,428 53	
	34,780 00	2,777 00	7,265 00	5,649 63	109,096 78	119,313 78	5,268 47	699,305 26	10 00	3,045 65	1,987 40	13,007 91	5,355 00	2,879 75	1,009,741 63	

CHAS. H. BEDDOE,  
Acting Accountant.

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 18th January, 1899.

# Department of the Interior.

## DOMINION LANDS REVENUE.

STATEMENT of Receipts on account of Dominion Lands for the fiscal year 1897-98 compared with the previous fiscal year.

Particulars.	Fiscal Year, 1897-98.	Fiscal Year, 1896-97.	Increase.
	\$    cts.	\$    cts.	\$    cts.
Dominion Lands Agencies .....	154,645 58	97,132 07	57,513 51
Crown Timber Agencies .....	75,402 07	68,992 82	6,409 25
Rocky Mountains Park of Canada .....	3,045 65	2,132 11	913 54
Hay, mining, coal, stone and grazing lands .....	22,607 35	15,733 19	6,874 16
Miscellaneous .....	18,555 89	17,001 88	1,554 01
	274,256 54	200,992 07	73,264 47
Yukon District .....	735,485 09	5,861 50	729,623 59
	1,009,741 63	206,853 57	802,888 06

CHAS. H. BEDDOE,  
*Acting Accountant.*

DEPARTMENT OF THE INTERIOR,  
ACCOUNTS BRANCH,  
OTTAWA, 20th January, 1899.



Department of the Interior.

PART II

IMMIGRATION





# Department of the Interior.

## IMMIGRATION.

### REPORT OF THE SUPERINTENDENT OF IMMIGRATION.

DEPARTMENT OF THE INTERIOR,

OTTAWA, 31st December, 1898.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to submit to you for publication in the annual report of the Department of the Interior for 1898, my own report and the reports of the several Immigration Agencies in Canada, the United States and Europe. These reports—about 67 in number—enter fully into the details of our immigration work, both at home and abroad.

#### THE AGENTS ACTIVE.

During the year, efforts were made throughout the several agencies to secure as large a movement of population as possible to Canada, and the result of the activity displayed in this connection, shows a gratifying increase in the number of people entered as declared settlers.

#### WORK AT HEADQUARTERS.

The business transacted at the head office during the year, is considerably in excess of that of last. The attachments made to our files were 22,724 in 1898, as compared with 15,462 in 1897. Numerous enquiries have been received from far and near, mostly from intending migrants, but also from others interested in Canada, and these, in whatever language or from whatever part of the globe they came, have been promptly and fully answered, and where advisable or practicable, the work thus begun has been followed up by the personal attention of our agents.

#### IMMIGRATION LITERATURE.

During the year, the following literature was published for distribution:—

Title.	No. of Pages.	No. of Copies.
Official Handbook of Information . . . . .	115	6,000
Western Canada . . . . .	47	90,000
Eastern Canada . . . . .	63	5,000
Hints to Settlers . . . . .	30	20,000
German Pamphlet . . . . .	80	20,000
Some of the Advantages of Western Canada . .	16	30,000
Notes from Kansas and Michigan Delegates' Reports . . . . .	24	30,000
Timely Remarks by S. Field . . . . .	24	30,000
Flemish Pamphlet (Canada) . . . . .	35	10,000
German Leaflet . . . . .	..	18,000
Going to Western Canada . . . . .	16	200,000
Reports of U.S. Delegates . . . . .	80	20,000

The following publications were also distributed to enquirers:—

Title.	No. of Pages.	No. of Copies.
Prince Edward Island . . . . .	100	1,000
Winnipeg District (Scan.) . . . . .	14	3,000
do (German) . . . . .	14	2,900
do (English) . . . . .	14	7,000
Polish Pamphlet . . . . .	31	5,000
Bohemian Pamphlet . . . . .	32	5,000
British Columbia Year Book . . . . .	285	500
do do (Bound) . . . . .		200
Scandinavian and German Folders and Leaflets. . . . .		3,500
A Few Facts . . . . .		20,000
Calendars, Winnipeg Industrial Fair. . . . .		5,000
Making a total of . . . . .		562,100

In addition to the above, special editions of newspapers containing immigration material, were secured and distributed, to the extent of 72,800 copies, making a grand total of 634,900.

During the year, 33,155 applications for literature were received at the Department and dealt with. In response to these applications, 132,620 pamphlets were distributed. In addition to this, 103,500 copies of the pamphlet entitled "Going to Western Canada," were sent to names on a general list furnished us, making a total of 236,120 publications distributed from the head office, exclusive of the special issues of the newspapers above referred to. A large quantity of this literature was sent in cases to our agents in the United States and Europe, for general distribution, that intended for Europe having been forwarded to Liverpool and that for the United States to Detroit for distribution from these points. The greater portion of the literature circulated in Great Britain and Ireland is prepared there, under the direction of the High Commissioner, from information and pamphlets supplied from this office.

#### ADVERTISING

The results that have accrued from our advertising in the United States and Canada, are summed up in the report of Mr. W. J. White, Inspector of our United States Agencies, who is in charge of this particular branch of the work. Our advertising in Europe, which attains considerable proportions, is conducted by the High Commissioner and is dealt with fully in his report.

#### MAGIC LANTERN SLIDES.

We have had prepared and forwarded for use mostly in Great Britain and Ireland, a large number of sets of lantern slides, which are used by our agents there when delivering lectures on Canada as a field for emigration. This mode of advertising has been found to be very effective, as is shown by the reports of our agents and that of the High Commissioner, and it is considered by them an excellent means of bringing Canada to the attention of the public. Several of our agents in the United States have made use of similar slides in connection with their lectures, and they report very favourably as to the results therefrom.

#### EXHIBITS AT FAIRS.

The experience of past years of exhibiting Canadian products at the State and County Fairs in the United States, as well as at different shows in Europe, was such as to warrant an extensive exhibit being made this year. With the assistance of the Experimental Farms, under the direction of the Department of Agriculture, and by the securing of a large number of exhibits collected by the Manitoba Government, acting in conjunction with this Department, a large number of first-class exhibits were obtained

## Department of the Interior.

and used with great success at the United States State and County Fairs, and similar terms may be used regarding those sent to the Old Country. The usual exhibits were supplemented by 50 or 60 glass tubes, about 4 feet in length, which were, under instructions from this office, filled with soil taken from different parts of Manitoba and the North-West. Wherever these tubes were shown, they proved a great source of attraction to those who visited the fairs. The reports of our agents bearing upon the question of these exhibits, justify the opinion that this form of advertising is likely to convey, as accurately as can be done by any other method, what are the true resources and capabilities of this country, and I venture to suggest that some system be adopted whereby these exhibits may be collected from year to year, so that they may be thoroughly up-to-date and available whenever required. This Department took advantage of the opportunity afforded through the kindness of officials of the Trans-Mississippi Exposition, held in Omaha, from June to October inclusive, this year, and also of the facilities afforded by the splendid exhibit made there by the Department of Agriculture, to forward immigration, and stationed there three or four officers supplied with large quantities of literature, etc., for distribution. The reports of these officers as to the interest manifested in Canada and the Canadian products by those who visited this Exposition, are very gratifying indeed.

### DELEGATES' REPORTS.

One feature of our work which has contributed very largely to the dissemination of reliable information and to the dissipation of false impressions regarding Canada as a field for settlement, has been the publication of the reports of delegates from the United States, who visited Manitoba and the North-west in the course of the year, and whose opinion of the country, after having made a careful inspection thereof, they very willingly placed on record for the benefit of all who may desire information in connection therewith. These delegates came from thirteen or fourteen States in the Union, and were representative men, chosen by the farmers residing in their respective districts, to investigate and report upon Western Canada.

### SERVANTS FROM SCOTLAND.

In the beginning of the year, arrangements were made with Mrs. Livingstone to go to Scotland as special agent to secure domestic servants. As a result of her endeavours, fifty-nine girls arrived here about the middle of June, all of whom, with the exception of three, went to Winnipeg and points west. The reports received at the Department in connection with these girls, show that they have turned out to be very successful and are well satisfied with their new homes.

### IMMIGRANT ARRIVALS.

The total number of declared settlers arriving during the year is as follows:—

<i>Via Ocean Ports.</i>	
English . . . . .	9,475
Irish . . . . .	733
Scotch. . . . .	1,400
German . . . . .	563
Scandinavian . . . . .	724
French and Belgian. . . . .	545
Galicians . . . . .	5,509
Miscellaneous nationalities . . . . .	3,832
	22,781
From the United States . . . . .	9,119
	31,702
Total. . . . .	31,702
Increase over arrivals during 1897 . . . . .	9,986

It will be seen as regards the ocean port arrivals that more than half came from Great Britain and Ireland.

As a result of Mr. Paulson's visit to Iceland, during the winter of 1897-98, about 130 Icelanders emigrated to this country and are now comfortably settled in Manitoba and the North-west.

#### VISITS OF INSPECTION.

I visited last spring the agencies at Montreal, (including the Colonization Society in charge of Dr. Brisson) St. John, Halifax and Quebec, and found that the staff at each place were attending to their duties, looking after the reception of arrivals, and making all necessary arrangements for their transportation west. At Montreal and St. John there is no accommodation for the retention of immigrants, but at Halifax and Quebec, the Immigration Halls are commodious and comfortable and well adapted for the purposes for which they are intended. During the summer I visited the agencies in the United States: Michigan, Illinois, Wisconsin, Minnesota, North and South Dakota, Nebraska and Iowa. In these various States, the agents were devoting themselves to the work outlined for them by the Department in inducing immigration to Canada, and every one of them appeared to be thoroughly earnest in his efforts, and conversant with the conditions of agriculture both in Canada and the United States.

During my trip to the West, I went as far as Winnipeg, and there arranged amongst other things, for the exhibits which were in due course forwarded to the States and to the High Commissioner in London. I also visited in the spring, the Colony of Verner, in charge of the Rev. C. A. M. Paradis, and found there a fair sized settlement, which, with the development of Northern Ontario, will no doubt largely increase. In September, I visited the Lake St. John District, where considerable colonization is taking place under the auspices of the Colonization Society of Montreal and the Quebec and Lake St. John Railway. Several prosperous settlements are springing up adjacent to the tributary waters of Lake St. John, and the movement of population to that district this year has attained satisfactory proportions, as evidenced by the report of the Colonization Branch of the Quebec and Lake St. John Railway, published herewith.

#### MR. BURRISS' COLONY.

In the early part of the year, the Rev. R. A. Burriss was appointed an agent of this Department for colonization work in the Rainy River District, in the Province of Ontario. Through arrangements made with the Ontario Government, whereby certain townships were set aside for settlement, Mr. Burriss has been able to offer favourable terms to incoming settlers, and has succeeded in inducing quite a number from the States to take up land in that part of the Province.

#### PAUPER CHILDREN.

I also made a tour of inspection of the pauper children brought to this country by various societies, and visited quite a number of these children in the Provinces of Ontario and Quebec. While in some cases the conditions were not absolutely satisfactory, yet I found the majority of these children comfortably situated, and content with their new homes. Where I thought it necessary, I gave instructions that the children should be removed, and this has been done in every case.

Mr. Doyle, of the Quebec Agency, and Mr. Regimbal, of the Montreal Agency, also inspected a number of these children.

## Department of the Interior.

There has been a marked falling off during the year in juvenile immigration under the auspices of philanthropic persons and societies. The following are the statistics of this class of immigration since 1893 :—

1893.....	2,720
1894.....	1,891
1895.....	1,830
1896.....	1,920
1897.....	1,648
1898.....	1,175
Total.....	11,184

### EUROPEAN IMMIGRATION.

The emigration from Great Britain and the Continent is slightly in excess of last year. There is no doubt that the prevailing good times across the water have had some thing to do with preventing larger emigration, but the reports of our agents, together with that of the High Commissioner, indicate that the popularity of Canada as a place for settlement is increasing, and that we have every reason to hope for a still larger movement of intending settlers from the Old Land.

### WORK IN BELGIUM AND HOLLAND.

Last season Mr. Treau De Coeli, of the Province of Quebec, was appointed agent for Belgium and Holland, and entered upon his duties there some time in the month of September. The Flemish pamphlet prepared by him and published by the Department, was forwarded to him as soon as printed, and his reports go to show that he anticipates considerable emigration from those countries in the near future.

### THE DOUKHOBORTSI.

In July last information was received by the Department that a number of Russians, namely the Doukhobortsi, were about to leave Russia and settle elsewhere. Representatives of these people interviewed the Department, and subsequently made an inspection of the Northwest, and as a result decided to remove to Canada as a suitable place for settlement. The number of those expected as a direct result of this determination, is about 8,000. Arrangements were made for the settlement of these people in the Whitesand and Swan River districts.

### REPATRIATED CANADIANS.

One extremely assuring feature of the movement of population, is the large numbers of ex-Canadians returning from the United States. The condition of agriculture in Canada, which is so much more favourable than that now prevailing in the United States, is such that, the movement to this country appears to be modified only because of the inability of the intending settler to provide means to move, or the delay of disposing of his property at home.

### WORK IN THE UNITED STATES.

At present, we have salaried agents in Michigan, Illinois, Wisconsin, Minnesota, South Dakota and Nebraska. In addition, we have several agents on an expense allow-

ance in Minnesota, North Dakota, Iowa and Pennsylvania. We have also several salaried agents who confine themselves more particularly to work in the Eastern States. There appears to be no falling off in the number of enquiries that are made to our agents regarding the resources of Canada, and the liveliest interest is manifested by the farmers of the United States, in securing such information as may satisfy them of the attractiveness of this country as a home for the agriculturist.

#### PRESS EXCURSIONS.

The Press excursions for the last two years, conducted under the auspices of the Department, have resulted in giving us a most satisfactory advertisement, and the friendly, and in most cases, eulogistic comments upon the Canadian West cannot fail to augment the movement of desirable settlers to this country.

#### OFFICIALS IN THE NORTHWEST.

Referring to that section of our work confined more particularly to Manitoba and the North West, I may say that while this year's immigration has resulted in increasing the duties of the staff, these duties have been performed very satisfactorily. The intending settler finds that in addition to the natural advantages which the country possesses, he is ably assisted in making a start by the courtesy and consideration shown him by the immigration officials. So far, very few complaints have been received by the Department from the settlers and these have been of the most trivial character. Ample provision is made to accompany these people, from their landing in Canada to their final destination. Those who came via the Ocean ports were conducted through to Winnipeg by well trained officials of the Department, and from that point forward, were taken charge of by Commissioner McCreary's staff until they were practically placed upon homesteads of their choice.

With the opening up of new districts for settlement, the experience thus gained will enable our officials to deal satisfactorily with all settlers placed for the time being in their charge.

#### SETTLERS' REPORTS.

Reports that have been received from time to time by the Department, both from the settlers themselves and our officials, show that the vast majority of the newcomers are contented with the condition of things prevailing in Manitoba and the North West. These reports are utilized by the Department as part of our immigration literature and are having a very marked effect in inducing immigration.

#### COLLECTION OF STATISTICS.

The system of checking arrivals at Winnipeg is very complete ; but parties crossing the boundary line, either by waggon or at points west of Gretna, are not kept track of as closely as they might be, and I may be allowed to suggest that something should be done towards keeping a more accurate record of people crossing at those points.

The extension of the Canadian Pacific Railway by the Crow's Nest route may be the means of inducing larger numbers to cross the boundary further west than has been the custom hitherto, and this new condition of affairs may have to be met by further effort on our part, to obtain an accurate record of the number of settlers entering the country in this way.

#### CONCLUSION.

Looking over the year's work, it is noticed that the immigration to this country not only shows an increase in point of numbers, but the general testimony from our officials, from one end of the country to the other, is that the arrivals are a very

## Department of the Interior.

desirable class of settlers and will prove a valuable addition to the population of this country. It is true that of the large number who came to Canada, in 1898, there were some not very well provided financially to make a start in life under new conditions, but, notwithstanding this, the majority of those who came here in time to commence farming this year, have succeeded admirably and very few are likely to become a temporary, and none so far as I know, a permanent burden on the State. With the machinery now at the disposal of this branch of the Department, and with the feeling so prevalent in favour of Canada as a place for settlement, it is hoped that next year's work will show a considerable increase over this.

I have the honour to be, Sir,

Your obedient servant,

FRANK PEDLEY,  
*Superintendent of Immigration.*



## No. 1.

## REPORTS OF THE HIGH COMMISSIONER AND EUROPEAN AGENTS.

REPORT OF THE RIGHT HONOURABLE LORD STRATHCONA AND MOUNT ROYAL, G.C.M.G.  
HIGH COMMISSIONER FOR CANADA.

17 VICTORIA STREET, LONDON, S.W.,

17th February, 1899.

The Honourable

The Minister of the Interior,  
Ottawa.

SIR,—I beg to transmit herewith the reports of the agents of your department on their work in the United Kingdom, and on the Continent, during the past year.

## AGENTS AND THEIR HEADQUARTERS.

These agents are Mr. A. F. Jury, Liverpool ; Mr. G. H. Mitchell, Liverpool ; Mr. C. R. Devlin, Dublin ; Mr. John Webster, Dublin ; Mr. O'Kelly, Londonderry ; Mr. W. L. Griffith, Cardiff ; Mr. H. M. Murray, Glasgow ; Mr. W. G. Stuart, Elgin ; Mr. John Grant, Dumfries ; Mr. Thomas Duncan, Carnoustie ; Mr. Bodard, France ; Mr. Foursin, France, and Mr. D. Treau de Coeli, Belgium.

## THE IMPERIAL INSTITUTE.

A report is also inclosed from Mr. Harrison Watson, the curator of the Canadian section of the Imperial Institute. I am sorry that the provinces are not so well represented in that institution as they might be. Some are not even represented at all, which I venture to think is a matter for regret. Exhibits of the products and resources of the different parts of Canada cannot fail to be interesting as object lessons, and to attract the attention of visitors. For trade purposes also, the collections, if properly kept, up would be invaluable.

## EMIGRATION.

There are no figures available to show the actual emigration to Canada from the United Kingdom. The Board of Trade returns purport to give information, but are not reliable, as they include as emigrants all second and third class or steerage passengers.

And, again, the port of debarkation is taken as indicating the destination of the people. Consequently, all persons travelling to Canada by way of American ports, are shown in the returns as emigrants to the United States.

The returns are, however, of some use for purposes of comparison, as they are compiled annually on the same basis. The nominal emigration to Canada was much larger in 1898, than in previous years. There is no doubt also, that the actual emigration to Canada was in excess of previous years, and in this respect the Dominion is peculiar as being the only country in which an increase is shown.

While a good many emigrants travel to Canada by way of American ports, the movement via that route is largely confined to Eastern Canada. The American Steamship Companies charge a higher rate than the steamers going direct to Canadian ports,

## Department of the Interior.

and in the case of westward traffic, the inland rates from United States ports are in excess of those charged by way of Halifax, St. John and Quebec.

### CANADIAN AGENTS ACTIVE.

The Government have every reason to be satisfied with the activity of the agents of your Department during the past year. In the winter months of 1897-98 they were busily engaged in lecturing wherever an opportunity was possible. At other times they attended to their correspondence, and made a point of attending agricultural fairs, shows, markets and other gatherings where the classes wanted in Canada may usually be found.

Apart from the inquiries stimulated in this way, Canada was also widely advertised during the winter and spring months in the press of the United Kingdom. This has led to considerable correspondence and personal inquiry, and your agents, I may add, personally call on likely emigrants whenever it is possible.

### ADVERTISING.

In addition to our ordinary advertising, we have a bill placed prominently in each of the 25,000 Post Offices of the United Kingdom, through the courtesy of the Postmaster General, and the publicity thus obtained for Canada and its advantages leads also to considerable inquiry.

### STEAMSHIP BOOKING AGENTS.

The thousands of agents of Canadian Steamship Companies are also interested in booking passengers to Canada, the commission being higher than to other countries. I regret to say that we do not receive the same co-operation from the American Lines as from the Canadian Lines. This is owing, as already mentioned, to the steamship and railway rates to Winnipeg and the West being higher by American ports. We have frequently been in correspondence on this subject, and I hope the time is not far distant when we may rely upon the co-operation of every steamship line, whether plying to Canadian ports, or to the Northern ports of the United States, in our endeavours to find suitable settlers for the immense areas of vacant land still to be found in every part of Canada.

### CHRISTIAN KNOWLEDGE SOCIETY AND EMIGRATION.

The work of the Emigration Committee of the Society for the Promotion of Christian Knowledge is also of great value to Canada. This important society has ramifications all over the United Kingdom, and the organizing secretary, the Rev. Mr. Bridger—well-known in Canada—is indefatigable in his efforts to keep the clergy prominently advised of Canada's progress, and of the great advantages the country offers to emigrants of the different classes. The society also arranges for parties to be sent out periodically under the charge of chaplains, who, upon their return to the United Kingdom, invariably make known what they have seen in their visits to the Dominion.

### OTHER SOCIETIES.

There are also many other societies engaged in emigration work. As a rule they exercise great care in regard to the people they send out, and it gives me great pleasure to co-operate in their efforts as far as possible.

### JUVENILE EMIGRATION.

The emigration of children is also being better supervised than previously under the rules made by your Department and by the various provinces. The movement has

certainly fallen off to some extent, but there are fewer complaints of undesirable young children being emigrated.

Mention must also be made of our work during the last few years in the schools of the United Kingdom. At the present time we are in correspondence with from 2,000 to 3,000 schoolmasters. Several thousands of our large maps of Canada are hung upon the walls of the schools. These maps are used in connection with the lessons, and are seen also by the people who attend meetings in the buildings in question. A large number of our pamphlets are also being used as ordinary readers in the schools, and as the children take the books home, Canada is thus introduced into many houses in which it might not otherwise become known.

#### USE OF LANTERN SLIDES.

In the course of our correspondence, I find that many schoolmasters have a practical, as well as a theoretical knowledge of Canada, and our lantern slides of Canadian scenery are much asked for by such persons. There are now about 30 sets of slides in use. They are in such demand from October to April, that all the applications cannot be met. They may be obtained by schoolmasters, and indeed by any one who will undertake to lecture, and it is no exaggeration to say that each set is used at least from three to four times a week, so that considerably over 1,500 lectures on Canada are delivered during the autumn, winter and spring. The Canadian Pacific Railway also have a number of slides, as well as the steamship companies, and so popular has Canada become that many professional lecturers now include it in their lists.

The Canadian Pacific Railway have also initiated a series of animated photographs of Canada, its scenery and its industries, which is much in demand. Naturally my Department co-operates in any efforts that have for their object the dissemination of knowledge about Canada.

We have laboured under some difficulty in regard to our slides for some time past, and there have been complaints with respect to them. This has arisen from the fact that we were dependent upon the material obtained in a haphazard way. Slides taken from photographs are never so good as those prepared direct, and in order to make good slides it is necessary that the negatives should be taken with a special camera. I called your attention to the matter, and you were good enough to arrange for a number of special slides to be sent me. They arrived somewhat late in the season, but will be employed whenever an opportunity occurs, and are sure to prove of great value. Favourable criticisms of our slides are, however, more numerous than unfavourable ones, and with the slides you have sent, the latter will be even less in the next season than they have been hitherto. Of course in dealing with slides, much depends upon their manipulation and the lantern that is used.

#### THE FUTURE.

With regard to the future, I do not think we can do much to improve our present methods of working. It might be desirable to extend our efforts, and to spend more money on advertising, on pamphlets, which must be kept up-to-date and changed occasionally, on lectures and on agricultural shows. At the same time, however, it must be remembered that the field in the United Kingdom from which we can draw our emigrants is comparatively limited.

We only encourage persons with capital, farmers, farm labourers, and domestic servants to proceed to Canada. In former reports I have explained the difficulties that tend to prevent the emigration of these classes on as large a scale as we would like, and a good deal of our effort is in the direction of preventing undesirable emigration. Although our inquiry is very large, both personally and by correspondence, the greater proportion of it comes from people who have not the means to emigrate. Capitalists and farmers are slow to emigrate in any case, and the other classes are doing better than at any previous time, and, except among some of the younger members of the

## Department of the Interior.

families, there is not that enterprise and that disposition to look ahead which so often lead to emigration. Still, we are getting good results from our work, and I am very hopeful that our immigration will continue to grow in the future.

### WORK OF OTHER COUNTRIES.

From time to time the activity of other countries and colonies in the direction of emigration is apparent, and is duly reported to you. Some of the colonies offer free passages to exactly the classes of persons we are trying to secure. While this does interfere with our work to a certain extent, it does not make any considerable impression on the bulk of the emigration to Canada. It is generally admitted in steamship circles, that Canada gets the larger proportion and the cream of the emigration which leaves the United Kingdom.

### WHAT MIGHT BE DONE IN CANADA.

Our emigration work would be greatly assisted by more help from Canada. Personally I should like to see emigration committees formed in all the electoral districts of Canada. Not only would they assist the Government agents in receiving and looking after new arrivals, but they could watch the progress of new settlers, and persuade them and old settlers to keep up communication with their friends in the United Kingdom, and to write to the papers in the districts from whence they came, relating their experiences, and offering to correspond with those contemplating emigration; photographs of the different districts would also be of great use to us, not only in themselves, but as the basis for the preparation of lantern slides, and illustrations for our pamphlets, and for loaning to the illustrated press. Supplies of grain and other produce would be interesting and instructive, and frequent communication between the emigration committees in Canada and the Government offices on this side could not fail to be advantageous. And further, I should always be glad to receive from secretaries of agricultural societies a description of the districts in which they work, the advantages they offer to farmers, &c. Such information could be utilised to great advantage.

### FOREIGN IMMIGRANTS.

I am glad to say that the foreign emigration to Canada is growing. According to all accounts the Galicians are doing well, and will eventually make excellent settlers. The Doukhobors also created an excellent impression, and their work in Southern Russia under great disadvantages indicates that they possess the qualities which are necessary to success in the Canadian North-west.

We have not had so many Germans and Scandinavians as we would like. This arises from the fact that the Governments of the countries in question are opposed to emigration, which is made as difficult as possible, apart from the fact that the people of those countries are enjoying an era of prosperity at the present time. Naturally in our endeavours to make Canada better known on the Continent, and to extend our trade relations we keep strictly within the letter of the law. There can be no doubt, however, that an increased knowledge prevails of our country and its resources, and the success of the Continental settlements in the different parts of Canada is sure to have its effect.

### MANY INQUIRIES.

Our advertising is now in full operation, and in my own Department we are receiving on an average 100 letters of inquiry a day, exclusive of personal applications for information. The average number of callers in my Department is 1,000 a month.

## CANADA ATTRACTING MUCH ATTENTION.

Not only in the advertising columns of the press is Canada receiving publicity, but in the news columns items of information about Canada frequently appear. In view of the attention the Dominion is attracting, I recently took the opportunity of addressing the following letter to all the leading papers in the United Kingdom:—

“Sir,—May I be permitted, at the opening of another season, to again draw the attention of the public, through your columns, to the advantages Canada offers to those who are contemplating emigration.

“The great need of Canada is population, and there is room for many millions of people in the different provinces. With a territory nearly as large as Europe, its inhabitants are not more numerous than those of London. Free farms of 160 acres are offered to settlers in Manitoba and the North-west Territories, where thousands of square miles of fertile lands remain unoccupied. This land is suitable for mixed farming, for the raising of cattle and for dairying. Crown grants may also be acquired in the other provinces, and improved farms at reasonable prices. I may mention also the great mineral wealth of the Dominion, its fisheries, its forests of timber, and its growing manufacturing industries, all of which are capable of great development, if the necessary capital is forthcoming.

“Canada seems to have entered upon an era of prosperity. The harvests of the past two years have been generally satisfactory. The other industries, as well as agriculture, have shown considerable expansion, and the export trade, notably in food products of all kinds, is rapidly increasing. The same remark applies to the import trade, especially from the mother country, which cannot fail to be benefited by the preferential tariff. The inauguration of penny postage will certainly also have the happiest results in cementing the bond of union between the different parts of the empire.

“While it is not my intention to advise any person to emigrate to Canada who is already doing well at home, there are, undoubtedly, many who from some cause or another have the matter under consideration. The classes wanted in the Dominion are persons with capital, agriculturists, tenant farmers, young men desiring to learn farming, male and female farm servants and domestic servants. Such persons often experience much difficulty in knowing to whom to apply for guidance, and I shall be glad if you will allow me to mention that the Dominion Government have established agents in the United Kingdom, whose names and addresses may be found on a notice displayed in almost every post office, through the courtesy of the Postmaster General. From these agents, and from my own Department, advice, information, pamphlets, and letters of introduction to the Government agents in Canada may readily be obtained.

“I will only add that those who go to Canada, ready and willing to aid in the development of the country, may be assured of a cordial welcome. They will not find themselves in a strange land, but among a loyal and prosperous people, as proud of being subjects of the Queen as if their destiny had led them to reside in the United Kingdom.”

The press has been very appreciative in its remarks upon the letter. It has received the widest publicity, and many communications, both personal and otherwise, have reached me in consequence of its publication. I think I may safely say therefore that the outlook as regards emigration to Canada this year, both as to quantity and to quality, is of the most encouraging character.

I am, Sir,

Your obedient servant,

STRATHCONA.

## Department of the Interior.

### No. 2.

#### REPORT OF THE CURATOR OF THE CANADIAN SECTION OF THE IMPERIAL INSTITUTE RELATING TO IMMIGRATION MATTERS.

THE IMPERIAL INSTITUTE,

LONDON, S.W., 13th January, 1899.

The Right Honourable —  
The High Commissioner for Canada.

STR,—As might be anticipated from the increased public interest shown in Canadian affairs, there has been a considerable volume of applications from persons desiring special information about Canada.

A large proportion of these inquiries came from young men possessing, or being in a position to obtain, a fair amount of capital, who wished to gain practical experience of farming in Canada prior to taking up land upon their own account. Indeed, applications of this class seem to have become quite a specialty of this office.

Quite a number proceeded to Canada in the spring and early summer, and as a rule the young men and others seem to have experienced no great difficulty in securing work.

It has been pretty conclusively shown that young men who possess some rudimentary knowledge of farm life, and who can ride, drive and milk, and know the general "hang" of the work, obtain much better engagements than those who are quite ignorant. This I have learned from the experience of young men who have gone to Canada as reported to their parents or friends.

Under the circumstances, I have for some time past advised those applicants who seemed to be fitted for the work and were not familiar with country life to spend a few weeks upon an English farm before going to Canada. As many of the enquiries are made in the late autumn or winter, the plan is often feasible. The results seem to justify the advice.

Amongst other inquiries there have been a fair number from persons wishing to embark in special lines of trade, who possessed means. In several cases special reports as to existing openings have been obtained.

There was a marked falling off in inquiries about the Yukon district. Apart from the subsidence of the first excitement, many public enterprises now make a specialty of this business.

British Columbia still attracts a great deal of attention. In this respect, the transmission of the promised new and representative collection of mineral specimens will be useful. The agricultural prospects of the province form the subject of many inquiries. Were it not for the difficulty in obtaining work upon farms as compared with the North-west and Ontario, and the high price of agricultural land in central districts, there would, I think, be a considerable immigration in this connection.

I continue to co-operate with the United British Women's Emigration Association and see and advise a considerable number of female domestic servants at the request of the secretary. In view of the vital necessity of inducing servants to go to Canada where they are in such urgent demand, it is worthy of note that many of the Association's correspondents adopt a policy which is hardly likely to attain the object desired by them. I constantly see letters from Canada, which offer wages which are, to anyone familiar with Canada, often absurdly below the level of what is being currently paid there. When in addition, the servant is required to pay her own passage, the inducement to proceed to Canada is, as may be imagined, not great. Good domestic servants are notoriously scarce in the United Kingdom and those who emigrate do so to better their positions. When

such servants as do proceed to Canada, find upon arrival that they have bound themselves to employers at lower wages than other servants in the district are being paid, they are not unnaturally discontented. In view of the indefatigable efforts of Miss Lefroy and the other officials of the Association to obtain servants of good character by means of the most thorough investigations and the great inducement which the protection afforded by their regular accompanied parties holds out to the servants, it seems regrettable that people in Canada who want servants do not act in a more liberal-minded manner.

There has not been very much progress made towards improvement of the collections, the majority of articles recently received having been in connection with current trade inquiries.

An excellent exhibit illustrative of the flour industry from the Lake of the Woods Milling Company and a very fine display of the cereals grown at the various Experimental Farms have, however, been added during the year.

There is still an absence of any collection from the North-West Territories, which is all the more felt as the settlement of these districts increases. There are numerous enquiries for photographs of the Edmonton, Calgary and other districts from persons who have read of their resources in the Government pamphlets and who naturally expect to find views and displays of the products and resources at the Institute, as in the case of Manitoba and other provinces. Many representations have already been made in this matter.

New Brunswick remains also without any display. The increased importance of St. John as a shipping port, and the facilities of transportation which the province possesses for United Kingdom markets should render a more extended publicity of its natural resources, extremely advantageous.

There is as yet no representation of the agricultural and fruit growing resources of Nova Scotia.

I consider that views of our Canadian public buildings should be more extensively shown. The British public as a rule is ignorant of the splendid public and commercial edifices which exist in most of the large Canadian cities and towns. They afford an eloquent testimony to the increased wealth and prosperity of the community. The Australian Colonies have always made a point of this feature. The marked impression which is created must be of direct benefit to a country. The public is now tolerably familiar with the chief agricultural resources and features of Canada as a result of continued efforts made to that end. The time has now arrived to make more of our commercial and financial progress and solidity.

A large number of pamphlets and handbooks of all kinds has been distributed.

I have the honour to remain, Sir,

Your obedient servant,

HARRISON WATSON,

*Curator of the Canadian Section.*

# Department of the Interior.

## No. 3.

### REPORT OF THE CANADIAN GOVERNMENT AGENCY AT LIVERPOOL.

15 WATER STREET, LIVERPOOL, December 31st, 1898.

The Right Honourable  
The High Commissioner for Canada.

MY LORD,—In presenting the annual report of the Liverpool Agency, I have the honour to inform you that the year which has just closed has been one of the busiest since my first connection with the office in 1880. The greater activity in emigration propaganda which was made possible by the larger appropriation at our disposal added to the wider publicity which was given to the office as a commercial agency, and to the continuance and spread of the sentiment in favour of the Dominion which has been so noticeable during the past eighteen months, resulted in a larger inquiry in every direction, an increased emigration and a general expansion of business.

The following are the emigration returns from the port of Liverpool for the year ending 31st December, and I also give the figures for 1897 :—

#### TO CANADA DIRECT.

1897.		
Saloon passengers.....		4,946
Emigrants—		
British.....		12,494
Foreign.....		4,901
1898.		
Saloon passengers.....		5,457
Emigrants—		
British.....		15,524
Foreign.....		5,876

#### TO THE UNITED STATES DIRECT.

1897.		
Saloon passengers.....		15,596
Emigrants—		
British.....		25,358
Foreign.....		19,072
1898.		
Saloon passengers.....		16,276
Emigrants—		
British.....		22,827
Foreign.....		22,676

It is well known to you that these Board of Trade returns do not reliably indicate the ultimate destination of the emigrants either in the case of Canada or the United States; but such as they are they will serve for purposes of comparison. There is no



doubt, however, that a far larger proportion of the travellers to the United States than to Canada is composed of what may be termed "passengers," i.e., people who have been out before, and others whose passages have been pre-paid or who are going to join friends. The fact that the arrivals in Liverpool from the United States numbered 57,733, including 25,492 foreigners, last year, speaks for itself. Of *bonâ-fide* emigrants, in the sense of people who are going out for the first time, paying their own fares and not joining friends, and especially of those who intend to take up farming, Canada now secures a good share, and so far as my observation goes, the Dominion attracts the greater number of those of the more desirable classes of British nationality. In regard to foreign emigration, our position does not compare so favourably, but it is improving and a continuance of our present efforts will, I think, result in a gradually increasing movement towards the Dominion from the continent of Europe. The United States had the advantage of being well known there for many years before Canada took any steps to advertise her advantages, and the restrictions placed by continental governments in the way of emigration workers, have made it very difficult to remove prejudices and spread an accurate knowledge of Canada's resources and circumstances and to fight the interests and influences which are arrayed against us. The foreign emigration to the Dominion again shows an increase and the number of those advised to me by continental agents as having been booked through to Manitoba and the North-west Territories points, numbered 6,006 against 5,012 in 1897. The number comprised 573 Germans, 84 Swedes, 162 Norwegians, 16 Danes, 60 Belgians and Dutch, 147 French and Russians, 212 Austrians, and 4,724 Galicians, Hungarians, Ruthenians, Bukowinians and Poles. These in addition to the numbers going to the Maritime Provinces, Quebec and Ontario.

Nearly all the Galicians went direct from Hamburg, the conditions under which this emigration is carried on giving the German transatlantic lines almost a monopoly of the business.

Continental steamship agents have been reminded again and again that Canada needs certain classes only, but it is impossible for them to pick out this emigrant and reject that one; all they can do is to exercise discretion in a general way.

In the emigration of a large body of people, one must expect to find some of its members of a more desirable class than others, but they must be judged as a whole and some trouble and even expense in settling them satisfactorily will be amply repaid.

The Welsh emigration to Patagonia which took place in 1865, may be mentioned as a case in point. In that year, 154 Welshmen landed at the mouth of the Chubut River and in due course made their way to the lands which had been allotted to them fifty miles distant. The Argentine Government had undertaken to supply them with provisions for the first year, the colonists expecting to raise enough food for themselves after that; but in this they were disappointed, and not only in that year, but for six years the Government had to send them regular supplies of food and clothing. Notwithstanding the fact that about 500 settlers had gone out during these early years, the colony had dwindled to about 200 in 1871; then came prosperity, and the number of settlers had risen in 1880 to 800, in 1885 to 1,600, and they now number about 3,500 thoroughly prosperous people. But there is at present some disquietude owing to the military intentions of the Government and the fear that the children born there may be treated as natives of the soil. Two or three inquiries as to Canada have been received here from Patagonia and Chili. I may add that the colony has reached the exporting stage and only this week, a cargo of nearly 1,500 sheep has arrived in Liverpool from this interesting Welsh colony.

Scandinavian emigration is almost wholly desirable, but during recent years the volume has been small, owing to the great prosperity which has prevailed in every branch of business in the Scandinavian countries. It is said that nothing like it has ever previously been known; but this fact should not cause any relaxation in our work. Some failure of the crops has taken place this year in Sweden and Norway, and this may have an effect on next year's emigration; but in any case time will bring about a larger movement, and when the harvest comes, those only who have sown can expect to reap. In Denmark, the increasing competition of Canadian dairy products must sooner or later be felt, and when the necessity or advisability of emigration is forced upon the

## Department of the Interior.

consideration of Danish agriculturists, it is to the Dominion they will turn, if the advantages offered them are kept constantly before their minds in the meantime.

The emigration laws in Germany are most stringent, but the efforts of recent years have not been unfruitful; the authorities, unfortunately, are now favouring emigration to Brazil rather than to any other part of the world, and some very influential people are interested in promoting settlement there, paying large commissions to agents booking emigrants. The idea seems to be that the emigrants from Germany to the Brazils retain their nationality, language and customs in a measure they cannot do in North America, and they are assisted in this by being settled in colonies, on land purchased by a German Colonization society (Hanseatische Kolonizations Gesellschaft), and it is a further recommendation in the eyes of the German authorities that those of their people who settle there, become the customers rather than the competitors of the fatherland, contrary to what happens in the case of emigration to Canada and the United States. What tells in the end, however, is the success or otherwise of the emigrants themselves, and as it cannot be doubted that Canada is a far more suitable country than Brazil for mid and north European people, no expense or trouble should be spared to ensure their success in the Dominion, and ample means should be provided with which to make that success known here and to advertise the opportunities which also exist for their countrymen.

In the early part of the year, acting under the High Commissioner's instructions, I prepared and had printed pamphlets and folders in the German, Norwegian, Danish, Swedish, Ruthenian, Polish and Hungarian languages, 140,000 in all, and distributed the same through the continental agents and in other ways. An advertisement was also inserted in 200 newspapers in Sweden, Norway and Denmark, to which there was a very good response. The Government of Queensland has resumed active operations in these countries and is offering free passages to a certain number of domestic servants.

The only other item it is necessary to mention in connection with foreign emigration, is the movement of the Doukhoborts from Russia, which is at this moment taking place and with which I have been brought into contact, owing to certain Liverpool firms having in hand the negotiations for their transportation. I may say that a Russian holding a prominent official position here, states that these people are without doubt the best agriculturists in Russia and he considers their emigration a distinct loss to that country.

In regard to English emigration, the newspaper advertising which we were enabled to do in the spring brought applications, (including some from Africa, India, Australia, the United States and South America), which were distinctly encouraging both as to number and character, and the arrangement under which Mr. Jury interviews at their homes, those of our correspondents who desire it, has proved very satisfactory. My efforts, as hitherto, have been principally directed to promoting emigration for agricultural settlement, and the large majority of the enquiries have been in reference to farming prospects in Manitoba, the North-west Territories and British Columbia. Very many of the applicants had money, some of them considerable amounts, and a fair proportion had had agricultural experience at some time, but comparatively few Englishmen with any capital actually engaged in farming, can be induced to emigrate. They are as a class slow to move, but I think the people we do get, take their places very effectually after a year or two's experience. A large number of young men have gone out desiring to learn farming, with a view to future settlement on land of their own, and very many more would have gone if they could have secured definite situations before leaving home.

There have been more enquiries than usual from females, but many of these were from a class superior to that of the ordinary domestic servant, and the latter, more often than not, wants at least an assisted passage. Really good domestic servants, such as are wanted in Canada, are also in great demand in England, where they receive good wages, and unless special transportation facilities are offered no large number can be secured. The Queensland Government is offering or is about to offer free passages not only to domestic servants, but to approved agriculturists also.

The enquiry respecting the Yukon gold fields almost exhausted itself in January and February last, when 22 Miners' Licenses were issued from this office; only an occasional request for information as to this region is now received.

The correspondence has been very much heavier than in the previous year: the advertising, the resumption of active work on the continent, the arrangements in connection with Mr. Jury's lectures, his exhibits at agricultural shows and his interviews with individual emigrants have caused a large increase in the number of letters to be written. The various changes in the system of bonus payments has also caused much correspondence and has necessitated very numerous interviews with the steamship companies. A much greater quantity of printed matter has had to be made up and sent out to steamship agents who have been visited, to fairs, shows and lectures, libraries and reading rooms. Supplies have also been sent to many schools where the books are used as "readers" for a certain time, and then distributed among the pupils, who take them to their homes. Our stock of printed matter is now almost exhausted, and if the work is to be carried on during the coming year with as much energy as in the past twelve months, large new supplies will be needed. The Canadian newspapers, received for office purposes, are now sent regularly each week to reading rooms all over the north of England and are much appreciated: they cannot fail to awaken interest in the Dominion and in Canadian affairs.

The personal enquiries at the agency have been numerous, and these, with calls from Canadian residents who intend to do some immigration work while on this side, and who require advice and instructions in certain directions, have occupied much time. Assistance and advice have also had to be given to shipwrecked crews, cattlemen who have for one reason or another forfeited their return passages, and distressed Canadians.

My three sets of lantern slides were again in constant use during the lecturing season, and there appears to be a greater demand for them than ever. The value of the work done by such exhibitions cannot be over-estimated, and the expense, over and above the cost of the slides, is very small, as the persons using them provide their own hall, lantern and accessories.

From Liverpool, the emigration of children, under the auspices of philanthropic societies, has been less than in 1897, the number being 1,239, compared with 1,468, which was a decrease on the preceding year, 1896, of 305. The falling off is probably due partly to the higher rate of passage money, and, perhaps, partly to the new regulations of the Ontario Government; 45 inspections were necessary.

The Society for Promoting Christian Knowledge continued its organizing work, and chaplains were sent out each week during the spring and summer seasons; it influences a large number of emigrants, many of them of a very good class, and as the work is done in this office, a certain amount of control is exercised over it. This society has salaried agents in Quebec and Montreal, and active friends in all the provinces of the Dominion, to whom the emigrants are commended.

I have received much valuable help from Mr. Jury, and have maintained cordial relations with my colleagues, and the representatives of the steamship and railway companies.

Trusting that my work may meet with your approval,

I have the honour to be, My Lord,

Your obedient servant,

G. H. MITCHELL.

## Department of the Interior.

No. 4.

### REPORT OF ALFRED F. JURY.

(CANADIAN EMIGRATION AGENT FOR THE NORTH OF ENGLAND.)

15 WATER STREET, LIVERPOOL,  
31st December, 1898.

The Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—While the unusual interest in, and kind regard for Canada created in the public mind by the visit of Sir Wilfrid Laurier and the passing of the Preferential Tariff, still continue to exercise beneficial influence in favour of the Dominion, it has to a certain extent been overshadowed by the amount of space devoted by the Press of England to the record of the kindly feelings expressed by the United States towards this country. But in spite of this fact, which one cannot help observing, a lasting impression for good has been created by the causes above mentioned, and people I meet at Agricultural Shows, and those I visit on commercial business, tell me that they will buy where they can buy cheapest and best, but, as Canada is a British Colony and has given them a preference in her markets, everything being equal, they would much prefer buying from Canada.

The conditions of trade in the North of England during 1898, have been booming in most branches and have consequently been unfavourable to a large emigration, but I have not lost an opportunity, nor spared an effort, to bring the claims and the advantages of Canada as a field for emigration or trade before the people of this part of England.

My work during the past year has consisted in attending agricultural shows, lecturing, visiting steamship agents, interviewing intending emigrants at their homes and at the office, watching Canadian affairs as reported by the Canadian press in order to keep myself abreast of the times as to the development taking place there. I have presented a detailed account of the performance of my duties in attending shows, etc., to your office each month, which renders it unnecessary to go over the same ground in this report; it is sufficient to say that the agricultural shows were attended by hundreds of thousands of the pick of the agricultural class, who manifested great interest in the Canadian products there exhibited; that I was brought into contact with a large number of people interested in Canada as a field for emigration and trade and that a very large quantity of literature was distributed. I do not think too much importance can be attached to making a first class exhibit of our products at these shows, from the point of view of either emigration or trade, and large and varied supplies of samples of the best of all our soil products should be continually sent to this country for the purpose. Those which require warm weather for their growth, such as Indian corn, etc., are especially helpful to disabuse the mind of the average Englishman as to the nature of our climate. Last July, I received several stalks of corn which I exhibited at all the shows that took place after its arrival; it was also exhibited by Mr. Devlin at the Dublin Show, and everywhere created a great amount of interest. All products sent to this country for exhibition should be the best available of their kind, as they are looked upon by the people attending the shows, not as ordinary specimens of the products of Canada, but as the best the country can produce, and they are compared with the neighbouring English exhibits which are of the best possible quality. The Queensland Government, who also exhibit at these

shows, seem to keep this fact steadily in view. If plentiful supplies of the right quality were given to me, I could arrange with the steamship agents of the district after each show to put specimens in their windows, and the more or less permanent exhibitions thus formed would prove of great advertising value.

I should like to say a word about our literature and posters. In some respects the former is too meagre in detail; the latter are too flimsy and frail to be of use for any length of time. In regard to the literature, I would respectfully suggest that in all pamphlets dealing with settlement in Manitoba, the North-west Territories and British Columbia more detailed information be given in reference to the commencement of farming operations by the settler; for instance, in what time and at what cost he can get a house built and the kind it would be when finished; how soon a man can get a crop who arrives there about the end of March, and how he would go to work to get it; the cost of equipping a farm and the price fetched by the products; how lands can be leased or bought for ranching, how ranching is carried on, the cost of yearlings or stockers and the age at which they are ready for the market, also the price they fetch; where the ranching lands of British Columbia are situated and their proximity to means of transportation. These are some of the questions I am being continually asked.

With reference to the posters or show bills that have been sent here with the brass strips along the top and bottom; the paper is so relatively weak, compared with the metal, that in many cases they are partly destroyed before reaching their destination, and when hung up, a very slight touch will tear them and they are cast away as unsightly. This is a form of advertising that could be made very useful as the views are very attractive. I would suggest that similar views be printed on stiff cardboard with a string or tape at the top by which to hang them. Many steamship companies and others get out cards of this kind which last for years.

In regard to emigration, I do not think there will be any great movement during the ensuing year, or while the present prosperity in this country lasts, but the present agents in the United Kingdom have the advantage of their predecessors in so far as they have a prosperous Canada to send emigrants to. It is often said in Canada that the failures of the old country are not wanted, but I do not see how those who succeed are to be got, because the successful Englishman thinks there is no place like England. It is unfair to stigmatise all those who do not succeed here as failures; most of them are young men who have not found opportunities here for their energies, and who would make very desirable settlers if they could be obtained for Canada. The ordinary tenant farmer thinks too much of his home and clings too closely to his past, to be easily moved to another country, and the agricultural labourer and the agricultural domestic are too poor to pay their own passage, so that under present circumstances a large emigration of these classes cannot be looked for, though no effort will be spared to get them if they can be got. The class from which we are most likely to draw emigrants is composed of young men who have not been able to find their proper place in this heterogeneous industrial beehive, and who often with very small capital, and no practical knowledge of agriculture, want to try their fortune in the colonies as pioneer farmers. Many of these young men make excellent settlers, but they want a little coaching, in the way of taking them in hand when they arrive and finding them employment.

Trusting that these suggestions will receive your favourable consideration and that I shall be well supplied with samples of Canadian products to exhibit at the agricultural shows during the year,

I have the honour to be, My Lord,

Your obedient servant,

ALFRED F. JURY.

## Department of the Interior.

No. 5.

REPORT OF W. L. GRIFFITH, AGENT IN WALES.

10, THE WALK,

CARDIFF, SOUTH WALES, 5th January, 1899.

To the Right Honourable  
The High-Commissioner for Canada,  
London.

MY LORD,—I have the honour to submit my report for the year just ended.

The number of letters (Welsh and English) received at this agency during the past seventeen months, was 2,369. The number of letters written was 2,484.

During the past year about twenty thousand pamphlets have been distributed with care, among the farming classes chiefly. I have also sent a supply of our literature to all the libraries and reading rooms in Wales.

The number of intending emigrants who called at this office in 1898 was 321, most of these calling in the early parts of the season. In addition, there were the ordinary business enquiries. I travelled in 1898 to 168 different districts for the purpose of personal canvass.

During the year, a small outfit, consisting of a tent and a small exhibit of samples has been procured for this agency, and exhibits of Canadian products, wheat, oats, barley, hay, in the straw and in bulk, and photographic scenes in Canada, minerals, &c., have been made, as already reported, at all the shows held in Wales during the summer and in many of the winter shows. These shows offered a splendid opportunity for the distribution of literature among desirable classes. This exhibit was usually surrounded by farmers, and the questions asked and the criticisms offered pointed to the necessity for showing nothing but the finest specimens and also to the fact that the addition of a few samples of roots, say turnips and potatoes, to the exhibit would be wise. Remarks upon the practical nature of this form of advertisement were numerous. The press notices thereon were many and very favourable and as the territory affected by these exhibits was "unbroken" ground, it is to be assumed that the interest in them will increase for some years to come. The value of this mode of advertising was placed beyond doubt by such facts as the following: At Pembroke, a farmer worth \$10,000 informed me he intended going to Manitoba; at Lampeter, a farmer with \$15,000, together with others, similarly informed me. More instances could be given. As the result of the literature distributed, the business of this agency is largely increasing.

During the year, I arranged for the delivery of twenty-three lectures in my territory.

I also arranged for the hanging of several hundreds of our posters at points throughout Wales.

The press notices obtained have been continuous and important, and to the action of the newspapers, and to the "Western Mail" especially, is largely due the importance which Canadian emigration has assumed in the national mind of Wales. The despatching of a "Special Commissioner" to Canada by the proprietors of the "Western Mail" was regarded as a step of the utmost importance in Wales, and his reports have been of untold value to the work in the principality. It is not necessary to urge the importance of a series of articles favourable to Canada appearing in one of the most powerful of provincial papers, as well as in others, all situated so as to reach every hole and corner in Wales. It is safe to claim that no colony has ever before received so thorough an advertisement in a district of the same extent, as Canada did in Wales through the means referred to. Paid for at the ordinary rates, the press notices I have been able to procure during 1898, would cost several thousands of pounds.

The year commenced with a number of violent attacks on Canada in some of the Welsh papers. These I handled without gloves. They have discontinued. Thanks are due Your Lordship and Mr. Lister, of Dursley, for important replies to dissatisfied emigrants in the Welsh press.

In the foregoing I have sketched briefly and barely some of the methods employed to further the end in view. No idea, however, is hereby given of the extent and variety of the means employed. This has been done in my monthly reports, and by letters sent you regularly.

One of the results of the work in Wales in 1898, has been that 140 persons, all of whom I came into personal contact with, and consequently was able to form an estimate of their fitness or otherwise, have emigrated. In my opinion, they were all settlers thoroughly suitable for Canada. I have kept in touch with them, and find that only one man is dissatisfied; the balance are sending home capital reports. In addition, there was a considerable number who, after receiving information and advice from this agency, emigrated without notifying me, and others again who were indirectly influenced by my work; these I estimate to number at least sixty persons, so that the total number of persons who left Wales in 1898 was 200. As to the class of these emigrants, I notice with pleasure that Commissioner McCreary refers to one of my clients, Mr. James, as the best settler who came to Manitoba in 1898. When it is borne in mind that previous to the establishment of this agency, the movement from Wales to Canada consisted of about a dozen from South Wales and two or three persons from North Wales per annum, it will be admitted that there is no cause for dissatisfaction with present results, and taking the present evidences, much hope for the future. This agency has broken new ground, and since its establishment, a little over a year ago, some 350 persons have been induced to emigrate by its means. The aggregate capital of 240 of these persons was stated to have been \$56,075. It is interesting to note that when asked "what first directed your ideas towards emigrating to Canada?" the invariable reply was "I saw so and so in the newspaper."

I have been able to make such arrangements, that if anything of importance to our work transpires in any locality within my district, such as a tenant getting notice to quit, I am almost sure to be informed of the same.

There are two classes in Wales whose condition is one of great interest from our point of view. I refer to (1) the Welsh farmer, (2) Welsh agriculturists now working in mines, workshops and elsewhere.

The Welsh farmer—I mean the agriculturalist of rural Wales—is a most thrifty man and works hard, and his wife and sons and daughters all work hard on the farm. The latter work without wages: they have their bed and board and clothing of a kind, and when they marry, their parents levy toll upon their own stock and the stock of their friends to set the young people up on a holding. If they do not marry, they continue to work without wages until in due time they, if the landlord's agent prove propitious or can be propitiated, arrive at a joint occupancy of their parents, holding and stock. And the Welsh farmer lives hard. But notwithstanding all the disabling conditions the Welsh farmer has to undergo, he will freely outbid his brother in order to get a farm. Let one of the burdened ones seek to ease his condition by endeavouring to obtain a reduction of rent, a dozen, a score, scores of others will bid for that farm as much and more than the occupier is paying. There are hundreds of small freeholders, so called, particularly in the three Western counties of South Wales, who have bought their holdings at 25, 30 and 35 years purchase, with borrowed capital, and have not only sunk all their savings, but are paying much more in interest on their mortgage than they paid in rent. Among the Welsh farmers, the exhibits made at the shows, as before referred to, and the free distribution of attractive literature came as a great surprise. There is every reason to believe that a continuous and vigorous application of the policy pursued hitherto, viz: newspaper advertising, exhibits at shows, and personal canvassing, will have the desired effect.

A Canadian unacquainted with "things as they are" in this country would readily, and with apparent reason infer that to induce the class of farmers just described to exchange the disadvantages of Wales for the great inducements of Canada in the farming line, would be a comparatively simple matter, to be achieved by a moderate

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attachment to his duties on the part of the "immigration agent." Such an inference, however, would be altogether inaccurate and would overlook the unexpected but passionate attachment to home of these persons, the prejudice against emigrating, usually shown by the feminine portion of the family, the discreet but strong influence of the "landlord" and his friends, the publication from time to time of unfavourable letters from unsuccessful emigrants to Canada, the competition, energetic as it is, of Victoria, Queensland, Western Australia, Tasmania and the Cape, and many other features, which cannot be mentioned here, but which go to render successful work on the part of the immigration agent, anything but the "pleasant tour," which it is a somewhat general Canadian sentiment he enjoys. The fact is the difficulties are great, and need diligence, ingenuity and tact to cope with. As a gentleman who has been in the business about twenty years informed me the other day, "to handle emigration is a business, not a picnic, and a business which takes as much learning as any, and more than most." Contrary to what might be expected, the tenant farmer who has the greatest difficulty to make ends meet, has up to the present, shown less disposition to emigrate than those of his class occupying a wealthier position, and particularly those of the latter with families of boys, among whom the prospect is most encouraging. As foreshadowed in the earlier portion of my report, I am dealing as adequately as the means at my disposal admit of, with the conditions involved, and with as much success as can be expected.

The industrial conditions of Wales continue more strongly than ever to point to the increasing importance of the principality as an emigration area. It seems certain that the drift of the rural population to the mines and workshops of Wales, has to a great extent been permanently arrested, and that relief for consequent congestion must be sought elsewhere. That this event is occurring with the accompanying hardships to the working classes, now in the mines and workshops, is apparent to those who study the conditions. That there are as above, in Wales, scores of thousands of industrious, sober, healthy, muscular, working men and women, who have been raised as farmers and farm hands, is, I believe, true. Out of the 120,000 coal miners in Wales, probably 60,000 were until early manhood and later small farmers and farm hands. An excess of population, with other disabilities, has forced them off the land. They possess all the advantages, from our point of view, that the "straight" agriculturist has, but in addition, they possess qualities of intelligence and adaptability, which in my opinion render them very desirable settlers indeed. The fact that they have from experience been brought to regard the remuneration paid miners as better than anything that can be earned on the farm, may render it necessary to dwell upon the mining resources of Canada in order to attract them, but I find, on the part of those already in Canada, a general appreciation of the great opportunities it presents in the farming line, and a consequent desire to revert to the occupation of early life, amid conditions much more enticing than they could ever dream of in this country. Thousands of these men are willing and anxious to emigrate to Canada. The inducements necessary to a large emigration are, that it shall be officially represented that in "such and such districts, it is probable that so many men could find employment."

That in a year or two after emigration, a large percentage of these men would be found on their own farms is, I believe, certain. Many of these men possess capital of from £150 to £400.

If I was furnished from time to time with the names and addresses, approximate wages, etc., of those wishing to employ female domestic servants, I think it would result frequently in the emigration of girls to whom some definite place to go to would naturally mean a great deal. During December, for instance, I had applications from seven girls of good reference, wanting places in Canada. I am not sure that they were all prepared to pay their passages, although they are always willing it shall be retained from wages.

During the year, Mr. James, of Clarboston, one of the wealthy leading farmers of Pembrokeshire, was induced to visit Manitoba. In the result, Mr. James purchased 640 acres of land near Rapid City, and the coming season will find most of his family settled there. This gentleman's report that £200 invested in Canada is equivalent to £1,000 invested in Wales, in the farming line, is causing much attention. It is expected that there will be a gratifying emigration from this district, South West Wales, during the coming year.



The new line of steamships running from Milford Haven to Paspebiac, which is being widely advertised by the Great Western Railway Company, is likely to bring about an increase in Welsh emigration to Canada.

Mr. John Fry, emigration boarding house keeper, St. Paul's Square, Liverpool, who has had many years experience, informed the writer that the emigration from Wales to Canada during the past two seasons equalled the combined emigration, during all the previous years he had been in the business. "In fact," he said, "we never counted on anything from Wales."

In conclusion, I may say that the work of this agency is in a flourishing condition, and that the assurances for next season are much in excess of this time last year. The work under your direction and approval has been, I think, faithfully performed, and I am quite confident that next season's results will bear witness to this fact.

I have to tender my thanks to the Welsh Press for the exceedingly generous support, especially the "Western Mail," they have unfailingly extended. I am glad to say my relations with the representatives of the steamship companies have been most cordial.

I have the honour to be, My Lord,

Your obedient servant,

W. L. GRIFFITH,  
*Canadian Government Agent in Wales.*

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No. 6.

REPORT OF MR. H. M. MURRAY, PRINCIPAL AGENT FOR SCOTLAND.

52 ST. ENOCH SQUARE, GLASGOW, 31st December, 1898

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—In submitting my second annual report, for the year ending December 31st, 1898, I am pleased to be in a position to say that the emigration of desirable Scotch settlers during the season just closed, shows a decided increase over 1897, and this notwithstanding the fact that farmers during 1897-98, had crops rather over the average, and that wages for agricultural labour ruled high. The total number of Scotch emigrants who sailed direct from the Clyde to Halifax, Quebec and Montreal was 1,150, as compared with 984 in 1897, (and from the latter number falls to be deducted 236 Quarrier's children, of whom none have been sent out this year). Added to these numbers, 513 Scotch sailed by Liverpool and 90 from the Clyde via New York, giving a total of 1,753 as against 1,493 in 1897. Doubtless quite a number sailed from Liverpool via New York but the figures cannot be got at. Of this number the large majority were *bonâ fide* intending settlers; at least 70 per cent went to Manitoba and the North-west, the balance being divided between British Columbia and Ontario. So far as I could see, they were in nearly every case desirable emigrants and many of them possessed of capital.

Constant work has also been done in the border counties of England, shows attended and lectures given. It is impossible to get at the full results of this work as passengers would sail from Liverpool and be classified as English, but I know that several young farmers went out from Northumberland and Cumberland.

I make it a special point to visit every steamer that sails from the Clyde to Canada, (and examine the accommodation provided, which in every case, I have found most excellent). I have thus an opportunity of having a short conversation with the passengers and giving them every possible advice and assistance. I also request our Scottish Government Agents and booking Agents to advise any emigrants who may pass through their hands that I will be glad to meet them in this office before sailing, and I am pleased to say that many have taken advantage of this offer and have expressed themselves grateful for the advice and assistance rendered. In this way they are made to feel at home before leaving, with the extra assurance of being met by Government Officers on the Canadian side, who will give them every needful help to select land, and where possible find situations for those desirous of obtaining some knowledge of the method of farming in Canada before taking up land for themselves.

In the early spring your Lordship was pleased to place at my disposal a tent for the purpose of displaying the resources of Canada at the different agricultural shows held in Scotland. I am glad to report that a great measure of success attended this departure; so much so that another tent had to be provided, as in some cases two shows were held in different districts on the same date. I do not know of any better means of getting in direct contact with the class of people Canada is principally in want of, viz., the farmer and farm servant.

The number of principal shows attended was 33, apart from a large number of fairs and markets where room could not be found for the tent. With very few exceptions these shows were largely attended and a keen interest displayed in our exhibit by grain merchants, farmers, servants and others. Manitoba No. 1, hard wheat, came in for

special commendation, as also some good samples of oats and pease. Barley is much wanted in Scotland, and I will hope next season to see some good samples sent over. Our agents are often asked what kind of roots we grow in Canada; it would, I am certain, be an education to the British farmer had we a selection on view. A display of fruits would also be of good service; these latter would, of course, require to be in pickle. Fresh sets of minerals are also wanted; in fact everything that the resources of the Dominion can produce ought to be on exhibition.

The scheme adopted by the Department for the sending out of suitable female domestics was fairly successful. Mrs. Livingston, who was appointed to select and accompany the party back to Canada, arrived here on 24th March. Previous to her arrival I had through the principal newspapers, invited applications, in response to which 209 letters were received, and 120 girls signed the form of application. Mrs. Livingston visited the districts from which they were received, interviewing the girls and inquiring as to their characters and qualifications. From various causes, when it came to the final squaring up, only 59 of those who had previously agreed to go out, reported themselves, and sailed under the charge of Mrs. Livingston by the Beaver Line SS. "Lake Huron" on the 4th June. The party, though fewer in number than at first anticipated, appeared to be a superior class of girls, and I have been much gratified to learn since their arrival that on the whole, they have given satisfaction to their employers. I have also had letters from several of the girls, telling me how pleased they were with their situations and the country. Many inquiries have been made by their friends and relations in Scotland as to when the next party would go out as they desired to make application. I am quite certain that if some help is extended in the way of advancing passages, quite as large, if not a larger party, could be made up next spring. On this point I may say that all domestics applying, and I have several every week, are perfectly willing to agree to any terms the Department may impose for refunding the money. It is not a matter of actual cost, they do not ask for cheap passages. Supposing full fares were charged, which to Winnipeg is £7 10s. third and £9 second class, no objection would be raised and half their wages could be retained until the total was refunded, which would be under the twelve months. Without assistance of some sort, and situations being pre-arranged it will be impossible to get many domestics to venture by themselves.

Much attention has been given to Canada this year in the columns of the Scottish press. A few grumbles and misstatements from a party who went out and remained for a period of one month, elicited many replies condemnatory of his assertions and in favour of the country. Letters from Scotchmen, who have been settled in Manitoba and the North-West for many years, were received by me and published in the *People's Journal* and other prominent newspapers, the result being that for a period of three months Canada was being well and favourably advertised in the principal weekly newspapers circulating among the farm servants in Scotland. Notices taken from Canadian papers and paragraphs written by myself and agents, have appeared from time to time, and I must thank the Scottish press for their many acts of kindness in giving us the free use of their columns for the insertion of matter relating to the prosperity of the Dominion.

One of our largest farmers, secretary to a Scottish agricultural society, in company with his daughter, made an extended trip to Manitoba and the North-West, and both have written very favourable impressions of their visit, which were published in the *Dundee Advertiser* and the *People's Journal*. All this, combined with the undoubted prosperity of the country, has awakened a keen interest in the affairs of the Dominion to an extent hitherto unknown, and from the increased inquiries both personally and by letter, is bound to have a most beneficial result on future emigration.

The work of interesting and educating the people by means of lectures illustrated by lantern views of Canadian scenery, farms and farm work was conducted by the different Scottish agents during the winter. In this respect I arranged that, as was carried out last year with much success, Mr. Thomas Duncan, M.P.P., should accompany each of our agents for a month or so and explain at the meetings from a practical point of view the mode of Canadian farming, and the present and future results to be obtained by men with and without capital, willing to put their shoulder to the wheel and devote themselves to earnest work. Many men have gone out this year who were influenced

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by last year's meetings, and I look forward hopefully to a like measure of success as a result of the present winter's campaign.

As was the case last winter, a large number of the Scottish clergy, schoolmasters and other gentlemen have rendered valuable service by delivering lectures on Canada assisted by lantern views obtained from this office. In the latter part of September I sent out a circular to the heads of the principal school boards in Scotland offering the use of our slides for this purpose. A large number of meetings have already been held and dates arranged for future lectures. Copies of the large three sheet maps have been accepted, and are in use by many schools. Parcels or pamphlets are also sent for distribution at all the lectures. The result of this work, from an educational point of view, cannot be overestimated, and many thousands who simply looked upon Canada as part of the United States of America are being apprised of the fact that the fairest colony in the possession of Great Britain lies within a week's journey of their own doors. The result of this voluntary work may not be immediate, but in agricultural districts especially it is bound in the future to be a great stimulus to emigration. For this work new sets of slides are very much wanted, those in use by the Government agents being in every way inferior to what I have seen used by private parties returned from a visit, and who have been lecturing on their experiences, illustrated by views taken in the course of their travels. I trust next year we will see each agent with an entirely new outfit.

In regard to the voluntary lectures, I append one or two letters received in reference to this work. Edinburgh Band of Hope Union write :—

“Herewith please receive the set of slides you kindly gave us the loan of last month. They have been shown at five lectures, and were very useful for making clear the great resources of the country. The pamphlets sent were carefully distributed.

“With many thanks for so promptly and kindly granting us the loan of them,

“Yours faithfully,

“W. G. BRUCE.”

Another gentleman writes :—

“I have duly dispatched the slides as requested to Mr. E. Marr, marking them immediate. I have to thank you for your great kindness in lending me them. They afforded teachers and scholars a most instructive entertainment.

“I am, yours faithfully,

“ANDREW COMRIE.”

“We have your favour of yesterday's date and have to-day returned the slides direct to your office as directed. The lecture passed off very successfully and was listened to by a good audience, a good number of whom were farmers. We send you under separate cover a copy of the *West Cumberland Times* of this date which contains a short paragraph of the proceedings. We hope the result may prove favourable, and that there may be some emigration to Canada from this district.

“Yours truly,

“JOHN EDGAR & Co.”

The passenger agents of the different steamship companies have been kept well supplied with our pamphlets. I have found that the large majority take a lively interest in endeavouring to secure emigrants. The bonus paid to them on settlers to Manitoba and the North-West is an inducement for them to do all possible for Canada against other countries. Our own agents call upon them in the course of their work,

and as time permits I frequently pay personal visits to the more important of them. As stated in my last report I have a business connection with these gentlemen extending over twenty years, and am fully alive to the value to be attached to their influence and assistance, which, I am glad to say, continue to be extended to me in no little measure.

During the year supplies of literature, posters and Canadian newspapers were sent to over 300 libraries, clubs and institutes. By this means farm labourers and others in remote country districts are kept posted on Canadian affairs.

As the result of advertising last winter on a somewhat more liberal scale, the correspondence of this office, and that of the other Scottish agencies, was considerably increased; the letters and personal interviews which followed assisted many of the farming class to see the advantages to be derived by making a fresh start for themselves, and I can trace from my books nearly 200 persons, some with families and capital, who directly corresponded and called here for cards of introduction before going out.

I am glad that provision has been made for similar advertising to be carried out this season, and would strongly suggest that advertising on a moderate scale be carried on throughout the whole year; a well placed advertisement in a few properly selected newspapers would, I am assured, be of much benefit in keeping Canada continually before the agricultural classes. Apart from the good to be derived from direct advertising we would have the further benefit of freer access to the columns of the newspapers for the insertion of articles bearing on the Dominion.

As your Lordship is aware an International Exhibition is to be held in Glasgow during the year 1901; it is to be run for a period of six months and will, it is believed, be one of the most important International Exhibitions held in Great Britain within recent years. The site extends to 67 acres, and already a guarantee fund of £400,000 has been subscribed. Its scope will be wide and general and is intended to represent a full illustration of produce and manufactures of the British Empire, its dependencies, dominions and colonies. I need not dwell on the importance of Canada being adequately and fully represented on this occasion; it will be a splendid opportunity for bringing the Dominion, its manufactures and products before the British public. I am glad to know your Lordship has accepted the position of honorary member, and as I have the honour of being a member of the Canadian and Colonial Committee it may be assumed that no effort will be spared to make our exhibit a success. In the meantime I have made provisional application for a space of 4,000 square feet, about one-half more than was utilized at the last exhibition held in 1888, which was a great success and left the handsome surplus of £54,000, as many as 120,000 visitors being present on one single day.

When the Honourable the Minister of Agriculture was in the city lately, I had the pleasure of taking him over the proposed site, and was glad to have the assurance that the Department over which he had control would endeavour to send a good exhibit. As the Canadian Court will be a Government exhibit pure and simple, I sincerely trust that excellent samples of agricultural produce, fruits, vegetables, furs, woods, minerals and manufactures will be sent forward, and that farmers, manufacturers, and all others interested will take a personal interest in this exhibition, which from every point of view is bound to result in good for Canada. Emigration will undoubtedly be promoted, and trade and commerce increased.

Since my last report Mr. Fleming, agent in the Lowlands, has been retired, but I was glad the Department thought fit to retain the services of Mr. G. W. Stuart, agent in the north, whose knowledge of the Gaelic and close connection with a district from which many prosperous settlers have been drawn, render him well fitted for the work in that part of Scotland.

I think that I have touched upon the principal points in connection with the work in Scotland and the north of England. Every possible effort is being put forth by the different agents to encourage the emigration of desirable settlers, and so far as I can see with present and every hope of future success.

The correspondence dealt with in this office during the year amounted to 2,519 letters received, and 3,152 sent out. In addition fully 30,000 pamphlets were distributed at shows, lectures, &c.

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As your lordship is aware, there has been a large increase in the work connected with the trade and commerce of the Dominion, in fact the correspondence and personal callers have almost doubled last year's. Every opportunity is and will be taken advantage of to develop and encourage trade relations between Canada and the mother country.

I send a special report on this work.

The total number of Scottish passengers who sailed from the Clyde and English ports to Canada by direct steamers, and from the Clyde via New York, was 1,753, as against 1,493, less 236 Quarrier's children, during 1897, showing the gratifying increase of 496 souls. The other British colonies and the United States of America have a large decrease, proving beyond a doubt that emigration to Canada is slowly but surely taking an upward tendency.

I cannot conclude this report without warmly thanking Mr. McCreary, Commissioner of Immigration at Winnipeg, for the great care and personal interest he has taken in the passengers sent out from Scotland, not only those specially recommended to him, but all others. It is very pleasing for me to learn from friends of those who have been assisted how much they appreciate what has been done. It gives them every confidence that not only here but in Canada they are taken in hand by Government agents and everything possible done to assist them in forming outlets for capital, obtaining situations, or help in the selection of desirable land.

I would also again desire to thank Mr. Colmer, Mr. Reynolds, and the staff of the London office for their extreme courtesy and assistance.

I have the honour to be, my Lord,

Your obedient servant,

H. M. MURRAY,  
*Principal Agent for Scotland.*

## No. 7.

## REPORT OF MR. JOHN GRANT, AGENT IN SCOTLAND.

DUMFRIES AGENCY, 31st December, 1898.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—I have the honour to submit the following report of my work in connection with this agency, for the year ending 31st December, 1898.

This work may be classified as:—Lecturing, attending fairs, markets and agricultural shows, personal visitation and correspondence.

During the spring and winter months I delivered 56 lectures, principally in the agricultural districts of the four counties comprising this agency in the south of Scotland, and in the counties of Cumberland, Westmoreland and Northumberland in the north of England. At 19 of these meetings, I had the assistance of Mr. Thomas Duncan, of the Carnoustie Agency.

Most of the meetings were well attended, while at some the halls were crowded to their utmost capacity, and although a few were poorly attended the average for the whole was good.

When addressing these meetings it has been my constant endeavour while speaking favourably of the Dominion, and pointing out the advantages offered to settlers of the right stamp, to avoid anything in the way of exaggeration and to present a plain statement of facts.

I consider these lectures of great value in our work, when illustrated with lantern views. The lantern is a great educator, and it must be apparent to all who are engaged in emigration work in this country that the lantern when properly used is of invaluable service in dispelling many erroneous ideas regarding the climate and conditions of life in Canada, which still exist even in the minds of well educated people over here.

It has been my experience since I began to lecture in this country, that people, especially in the rural districts, are more interested in hearing something about the conditions of life in Manitoba and the West than they are in hearing about the older and consequently better known provinces of Eastern Canada. It has, therefore, been my custom to address the meetings for at least half an hour before showing the slides; this, I think, is the only way in which an agent can give his audience a fair idea of the conditions of life and things in general in the Canada of to-day.

During the summer and autumn months, I attended all the leading county and local shows in my district, and assisted Mr. Murray at the Government stand at the Highland and Agricultural Society's show, which was held at Kelso. At 21 of these shows I exhibited cereals, grasses, and other products of the Dominion in the portable tent provided for that purpose. When not engaged with the tent I attended the local fairs and markets.

The tent is a new and important feature in connection with emigration work in Scotland, and the value of the exhibits can scarcely be overestimated as factors in bringing the Dominion, its resources and products more prominently before the agricultural, mining and other interested classes. They not only provide an object lesson of a practical nature; they also afford the agents an opportunity of conversing with, and distributing pamphlets to thousands of people who would otherwise be unapproachable. "Seeing is believing," and the farmer who smiles incredulously when told of the unrivalled resources of our western prairie lands is at once convinced when he can not only see but handle their products.

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At all the shows I attended the tent was a great centre of attraction when the weather was at all favourable, and I feel justified in saying that the work done in connection with these exhibits will turn the attention of thousands of our agriculturists to Canada, and greatly stimulate the movement of these classes in that direction. I therefore look forward to gratifying results in the near future.

These exhibits should be of the very best quality procurable, and here in Scotland oats and barley should only be exhibited when they are exceptionally fine, as the farmers are too apt to judge the whole display by the standard of the oats and barley, which are the staple cereals of this country, where they attain their greatest perfection. Wheat, pease, flax, Indian corn, wild and cultivated grasses, and roots should form the principal part of future exhibits. These may be supplemented with samples of minerals, woods, &c., as they always form an attractive part of the display.

At most of the shows I attended the secretaries and others who had the arrangement of the grounds, very willingly granted a good stand for our tent, and it was generally looked upon as an extra attraction to the show.

When travelling through the various parts of my district I make a point of calling on persons requiring information about Canada, or meeting them at the local markets and fairs. In this way I am able to give much valuable information to intending settlers, and I am also able to judge whether they are desirable emigrants.

The correspondence of my agency has always received my best attention, and while giving the fullest information possible by letter, I always endeavour to arrange a meeting, as I find that most agriculturists, especially of the farm servant class, seldom write for information if they can procure it in any other way.

During the year I came in personal contact with a number of farm servants who would make very desirable settlers, but being married men with families they find it impossible to emigrate, as it would take most of their savings to transport their families to Western Canada, leaving little or nothing to give them a start on the land. This alone prevents them from going to the Dominion. I feel certain that if some system of assisted transportation, or in the way of loans of money on easy terms, were inaugurated for the benefit of this class, the result would be a great influx of sturdy settlers, with strong, healthy young families, born and bred to farm work.

Since the party of domestic servants which left Scotland in June arrived in Canada I have had a number of inquiries from this class regarding assisted passages, and I think that if the experiment of last summer were tried again it would be even more successful.

When visiting the various parts of my district I make a point of calling on the agents of the steamship lines, for the purpose of obtaining information as to the intended movements of persons in their districts. I have also received much assistance from clergymen and schoolmasters in my district during the lecturing season.

In considering the emigration work of the year it must be borne in mind that the present year has been a prosperous one for Scotland; the harvest was good, consequently agriculturists shared in the general prosperity. Work was plentiful and employment readily obtained at good wages. But even under these circumstances I venture to hope that the results of our efforts will compare favourably with those obtained in years of general depression.

I have the honour to be, my Lord,

Your obedient servant,

JOHN GRANT.



## No. 8.

## REPORT OF MR. W. G. STUART, AGENT IN SCOTLAND.

CANADIAN GOVERNMENT AGENCY, 66 SOUTH GUILTRY STREET,

ELGIN, 26th December, 1898.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—In compliance with instructions received from Mr. Murray, principal agent in Scotland, I beg to submit the following report, regarding the work done in connection with this agency in 1898.

During the year I have lectured 104 times, in the following counties: Aberdeen, Banff, Caithness, Edinburgh, Forfar, Fife, Haddington, Inverness, Ross, Kinross, Kincardine, Nairn, Peebles, Perth, Orkney, Shetland, Stirling, Sutherland and Moray. As many of the meetings held in the north of Scotland were under the auspices of local societies, men of position and influence were interested, and capital audiences secured, and the expense of halls and advertising saved. Owing to the retirement of Mr. Fleming, Dundee, I was instructed to extend the sphere of my labours to the south and east of Scotland, and during the last three months I have been working almost continuously on Mr. Fleming's old ground. All the lectures were illustrated by lantern views, and recently an entirely new complexion has been given to the character of the lectures by the new and powerful lantern outfit sanctioned by your Lordship. The scenic effect has been greatly enhanced and the extent and resources of Canada can now be presented in a manner more natural and realistic than ever they have been before.

I have again to express my indebtedness to Mr. Thomas Duncan, M.P.P., Manitoba, for valuable services at meetings held in Inverness-shire, Ross-shire, Forfar, Fife, Kincardine and Kinross. Mr. Duncan deepened the favourable impression he made last year, and he was listened to with interest and attention. As I have hitherto found, the rural districts offer the best field for profitable work, and I have accordingly availed myself of every opportunity of lecturing in the more remote glens and straths, and the result in every case has been singularly satisfactory.

This year, thanks to the energy of Mr Murray, the work of attending at cattle shows, hiring markets, &c., has been put on a satisfactory and effective footing. A portable and commodious tent was provided, which not only proved an attractive advertisement in itself, but gave your agents an opportunity of exhibiting the products of the Dominion to thousands who never heard a lecture or read a word about the country. During the year I attended 82 markets, sales and cattle shows in the following places:—Aberdeen 3 times, Aberfeldy, Aberchirder, Abernethy, Aberlour, Avoch, Banff, twice, Bonarbridge, Beauly, Brora, Blairgourie, Ballindalloch, Carrbridge, Crief, Coupar-Angus, Cupar Fife, Cullen, Cromerty, Dornoch, Dufftown, Dingwall, 3 times, Dumblane, Elgin, 6, Forres, 4, Fortrose, Fortgeorge, Galashiels, Golspie, Grantown, 2, Haddington, Halkirk, Helmsdale, Inverness, 10, Invergordon, 2, Inverurie, Keith, 3, Kelso, Killin, Kingussie, Kirkwall, Lerwich, Lybster, Munloch, Muir of Ord, Nairn, 2, Newcastle, Old Meldrum, Perth, 2, Pitlochry, Stirling, Tain, 2, Thurso, Tomintoul, Wick. At many of these shows the Canadian tent was the principal attraction, and a large quantity of Canadian literature was distributed to good advantage, while the gatherings afforded a splendid opportunity of getting in touch with the right class of people, and conveying information to prospective settlers on all sorts of subjects relating to Canada.

## Department of the Interior.

My correspondence with farmers, farm servants and others has been steadily growing in bulk and importance, and I endeavour to give full and accurate information on all matters of interest and importance, and generally to smooth the way for those intending to emigrate.

The success that attended my efforts last year amply justified the continuance of the practice of personal visitation as a means of attracting attention to Canada, and this year I made a regular systematic and judicious canvass of many districts, being greatly helped in some places by the steamship agents, who furnished me with introductions, and otherwise assisted me in every possible way. I am extremely sanguine that good results will follow many of the visits paid in this way.

The newspapers, particularly in the north of Scotland, still preserve their friendly attitude to Canada. They not only give favourable reports of the meetings held throughout the country, but they are at all times willing to give space for paragraphs, articles and letters dealing with the progress and development of the country. This year, owing to the number of better class emigrants who went to Canada, scarcely a week passed but letters appeared communicating descriptions of the country, or personal experiences, and all, with one exception, favourable to Canada and full of practical and useful information to their friends at home. As letters from successful settlers are of the greatest value from an emigration point of view, I shall use every endeavour to encourage the practice of keeping up a correspondence with the newspapers circulating in their native districts.

This year the experiment was tried of prepaying the passage money of a select number of domestic servants, and a number of the applicants from the north of Scotland were successful in passing Mrs. Livingston's searching and careful examination, and as far as I can learn have given every satisfaction in their new homes. The undertaking was too limited in its scope and application to be popular all at once, but I am convinced that a more simple, effective, and less expensive scheme could be devised if the Government should see fit to renew the experiment.

The great expansion of the exports from Canada to this country during the last two years has had a most beneficial effect on emigration, and I endeavour to stimulate the growth of trade by bringing the products of Canada before the public whenever I have an opportunity. The magnitude of the Canadian dairy interest is now known and appreciated on this side, and Canadian cheese, for example, now often marked as such, even in the shops of the rural districts, presents an object lesson as to the superiority of Canada as a food producing country, and therefore a desirable place to live in. I have in previous reports emphasized the fact that the north of Scotland offers an extensive and profitable market for two-rowed barley for distilling purposes. The Cragganmore, Parkmore and Ord Distillery Companies were induced to buy Canadian barley, and the result has been so satisfactory that many of the distillers in the neighbourhood of Elgin are prepared to buy large quantities in preference to home grown. It is rarely, however, that the best quality is on the market, for buyers assert that while the colour is generally satisfactory the weight is deficient. But as the climatic conditions in Canada are suitable to the raising of the very best quality of this grain, I am convinced that with a little more attention to growing and grading, Canadian barley would compete successfully with the finest quality grown in Europe. The "splendid isolation" of Britain at the present time has fostered a decided feeling in favour of giving a preference to the products of our own colonies, and it is my constant endeavour to simulate this feeling in every place I visit.

During the year several large parties left the north of Scotland for Canada, and it is satisfactory to report that the bulk of these who went out were possessed of considerable means. The extraordinary interest taken in the recent gold discoveries in the Yukon country led to a number going out to seek their fortunes in that part of the country. One party consisting of a clergyman, a grocer, a painter, two mechanics, an ironfounder and his wife and family left in the early spring, and others followed, up to the middle of summer. Many of those who went out intending to go to the gold regions, with commendable prudence did not venture further than Manitoba, where it is probable they will make more gold cultivating its fertile fields than if they had gone to Klondike.

The future prospect for a large increase in emigration is at present very promising, and Canada has never been more popular and her capabilities better understood by the people of this country than at the present time. This is especially true of the north of Scotland and the Orkney Islands, by far the most profitable field for securing desirable emigrants. At one time I regarded the passing of the Allotment Act as a serious check to emigration, but this has not been the case. The more intelligent of the labouring classes realize that the Act in question is more of a hindrance than a benefit to those desirous of permanently improving their position in life, and it is a significant fact that the provisions of the Act have not yet been taken advantage of in any of the northern counties. It has been my special duty and privilege during the last six years to meet the requirements of the Gaelic speaking population in connection with emigration matters, and while there has been an ebb tide in other parts of Britain the flow of emigration to Canada from the north of Scotland has never sensibly diminished, and this year there has been a flowing tide.

In summing up the work of the year and its bearing on the future prospects of emigration, I am confident that the persistent and diligent efforts put forth in every conceivable way to make Canada more attractive to the people of Scotland will show satisfactory results during the coming spring.

In conclusion, I would gratefully acknowledge the assistance and encouragement I have received from Mr. Murray in carrying on my work. I have also to express my thanks to the clergy and teachers of the public schools for their assistance and hearty cooperation in making my meetings successful, and to the Highland Railway Company for granting special travelling privileges.

I have the honour to be, my Lord,

Your obedient servant,

W. G. STUART,  
*Canadian Government Agent.*

# Department of the Interior.

No. 9.

## REPORT OF MR. THOMAS DUNCAN.

CARNOUSTIE, FORFARSHIRE, 31st December, 1898.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—I have the honour to lay before you the following report of my work in connection with immigration, since the 15th of July last, when I arrived in this country.

From that date up to the middle of October, I was engaged in attending agricultural shows and other gatherings of farmers and farm servants in different parts of the country.

The attendance of agents at those gatherings is one of the very best means that could be employed for reaching the class of people that we want in Canada to settle our vacant land. The tents provided for the use of the agents on the show grounds are of great practical value, as they enable them to get into personal contact with the people, and they are especially valuable in facilitating the distribution of literature, the agents themselves being enabled to place in the hands of the most desirable people the various pamphlets which they have for distribution. Formerly this part of the work had to be done by parties hired for the purpose, with the result that the bulk of the advertising matter never reached the people for whom it was intended. I think that it is very important that everything that is possible should be done to make the Canadian stand on the show grounds as prominent and attractive a feature as possible. Any moderate expenditure in this connection, I am sure, would be fully justified by results. The exhibit of grains and grasses supplied to the agents is a great attraction to the farming community of this country, and I would here venture to suggest that great care should be taken in selecting the very best samples and from those kinds in which Canada excels. I cannot help thinking that it is a mistake sending samples of grain to this country that are not up to the standard produced here. I have listened, for example, to farmers discussing the quality of some of our oat samples, and the conclusion arrived at was, that they were far inferior to what they produced at home, and that a country that could not produce better oats than that did not amount to much.

I have noticed that a very common question asked here by the farmers is whether we grow good potatoes and turnips in Canada, and answers to the effect that we can, do not seem to be sufficient. If the agents were supplied with samples of the various feeding roots it would be quite as valuable, if not more so than the grain exhibits. Samples could be sent here in time for the late shows, and could be distributed by Mr. Murray among the agents at their headquarters, where they could show them to parties calling upon them seeking information about the country.

I have addressed 29 meetings since the lecture season opened, part of the time in the company of Mr. Stuart in the north of Scotland, and the balance of the time with Mr. Grant, of Dumfries, in the south. I attach great importance to this branch of the work. Our meetings have not always been so well attended as we could have wished, but on the whole I think they have been very good, and have enabled us to impart information about the country to large numbers of people in the rural districts who could not have been reached in any other way. It also gives opportunity for the distribution of literature, of which full advantage is taken at every meeting. All our lectures were illustrated by lantern views.

During the season I have visited a large number of towns and villages, and also done a large amount of personal work among people out in the rural districts of the country, following the plan of calling, whenever it was possible, on those who had written to me for information about the country. I have been much struck with the growing interest apparent on every hand by all classes of the people.

The greatest hindrance that exists to emigration, in this country, so far as Canada is concerned, is the ridiculous idea the people have about the climate. I have done everything in my power, in the districts where I have been working, both in my lectures and in private conversation, to counteract the misrepresentations that have been made and which seem to have taken hold of many of the people. It is much to be regretted, but I am satisfied that this drawback to emigration is largely due to the action of our own people in continually talking about the winter season. If it were not for this idea the work of the agent would be much easier, and many more people from this country would find their way to our shores.

I think everything that is possible should be done to show the people of this country what the climate really is, and it appears to me that much in that way might be effected by having exhibits of the various products that are grown in Canada in the open air, and can only be produced in this country under glass. A few samples of this kind taken round by the agents to the shows attended by them, and also at their lectures, would, I think, do much good. Acting under instructions from Mr. Murray, I called upon a number of people, chiefly in Aberdeen, who had friends who went to Canada last spring, and found in every case they had sent home good reports of the country, and also of the people with whom they were employed.

I wish to thank the Dundee *People's Journal*, a paper which is perhaps read by a larger number of the agricultural classes than any other paper published in Scotland, for so kindly giving us the free use of its columns for the publication of letters from settlers and others in connection with the controversy that arose through Robert Duncan, late secretary of the Farm Servants' Union of Scotland, in consequence of his unjust attack on our country. Personally I felt very sore about the matter at the time that his letters appeared, feeling that I was perhaps the means of his going out to Manitoba, but now I believe that the whole thing has resulted in much good, and has been a splendid advertisement for the country.

I have the honour to be, my Lord,

Your obedient servant,

THOS. DUNCAN.

# Department of the Interior.

No. 10.

## REPORT OF MR. C. R. DEVLIN, CANADIAN COMMISSIONER IN IRELAND.

14 WESTMORELAND STREET,

DUBLIN, 6th January, 1899.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—Last year, in making my annual report I anticipated that the returns during the present year, in so far as our efforts in Ireland were concerned, would prove satisfactory. The anticipation, then formed has been realized. We were anxious to secure for Canada a reasonable proportion of the large number of settlers who annually emigrate from Ireland, and statistics prove that during the year just closed Canada has obtained a good percentage. It is possible also that the number of settlers who have gone is still larger than we are given credit for by the returns of the Board of Trade.

I have already had occasion to point out that it is difficult to keep an accurate and precise record of those going to Canada from Ireland. Many who have gone were gentlemen of considerable means, and anxious to invest capital; others the sons of gentlemen of means; and in both cases they invariably took saloon passages. I question whether a record is kept of such settlers. Then a number of those leaving the south have sailed from Queenstown, thus passing through the United States before reaching their destination in Canada. It is to be hoped that the returns to Canada include such. Be that as it may, we have even in the returns presented the strongest possible evidence of the growing popularity of Canada in Ireland.

The eastern provinces have been equally popular with the western as a field for settlement.

The question may be asked why the returns of emigration to the United States are so much larger than those to Canada. Apart from other considerations, the main reason is that the Irish emigrant to the United States has his passage paid by friends already residing in the States, and that he has a place secured for him.

However, we have every reason to be satisfied with actual results, and I entertain the opinion that before the close of the year upon which we have just entered we will be able to secure of the emigrating class a much larger number than we have had during the year 1898.

My Lord, you will let me express my appreciation of your unfailing courtesy and kindness, and the readiness and desire on the part of your Department to help us in every way possible.

I am glad to be able to report that the Dublin offices have been visited during the year by a large number of Canadians, who have assured me that they found the agency most advantageous. They had their correspondence directed here; Canadian newspapers were at their disposal, and in any way we could serve them, we did. Some were tourists; others came on business. It is highly desirable that the Canadian tourist should be encouraged to visit Ireland. Many opportunities are presented to him to make Canada better known and his sojourn is sure to produce beneficial results.

I may add that during the year, evidence of Irish witnesses necessary for cases before the Canadian courts has been taken in our office, thus largely diminishing the costs of the case, which otherwise would have been rendered inevitably heavier.

Canadian merchants, barristers and others have on several occasions made use of the agency, and in some cases they acknowledged that they had been saved expense and inconvenience.

It is unnecessary to dwell upon the fact that daily we are called upon for information with respect to trade with Canada, and it is noteworthy that Dublin and Belfast are large buyers of Canadian products. Lumber, grain, cheese, apples, flour, &c., &c., are extensively imported from Canada, and it is safe to say that if Canadian exporters of such and other articles would endeavour to extend their business in this country, success would undoubtedly crown their efforts.

A steadily increasing inquiry is observable with respect to the advantages which Canada offers for investment of capital.

A new feature has been introduced in placing Canadian postage stamps in the various agencies. The sales made amply demonstrate the wisdom of this step; and it has two advantages: it makes the agency better known and the revenue in many cases derived from the sale of stamps is clear profit.

I cannot find language adequately to express my appreciation of the kindness shown by the press of Ireland. Truly we have reason to be grateful. Over and over again I have had the hospitality of the columns of the press for my letters—and they have been very numerous during the year, dealing exclusively with Canadian subjects. More than that, our Irish papers have extensively reproduced from Canadian exchanges articles bearing upon the leaps and bounds in the highway of national success and prosperity which Canada is making. I have never failed sending to the Irish press reports and other valuable works received from the various provinces in Canada.

You will let me suggest that it would be well to advertise even more extensively than has been done in the Irish press.

During the year we have supplied reading-rooms, libraries, clubs and many institutions with our pamphlets and papers, which were much appreciated.

I have also mailed to several thousand farmers such pamphlets, and to leading men copies of the Official Hand-Book of Canada. In fact when at the beginning of this report I suggested the probability of larger returns during the coming year, I had in mind the very heavy correspondence which we have been carrying on with intending settlers. In this respect we are kept exceedingly busy, many thousand communications having been received and sent. I do not refer to those who make personal calls and who are furnished with the information which they require. With respect to the direction of the office, I have had the constant assistance of Mr. Webster, and whenever I had to be absent myself, he has taken charge of it, being thoroughly conversant with the work.

The fairs which are held throughout the year offer excellent opportunities to the agent. He comes into contact with the agricultural class, and his experience is that it is wise to distribute literature on such occasions. He may also make engagements with his correspondents to meet him at the fair. The business of the office having assumed considerable proportions, it has been impossible for me to attend many fairs; but this branch has not been neglected by Mr. Webster. In the spring I had an opportunity of attending the Belfast Agricultural Show, where Mr. O'Kelly had a splendid exhibit of Canadian grains, cereals, &c.

Throughout the year, at spring and fall shows in Dublin, Cork, Limerick and elsewhere Mr. Webster and I have made exhibits of Canadian products of the mine, the forest, the field.

At such shows the Canadian stand has always attracted large numbers, and in so far as the section of the country in which we operate is concerned, I must say in justice to Mr. Webster that our success at such shows is due to his efforts, his practical knowledge of agricultural life and industries, his long experience in the West. His taste in arranging our exhibits has been much admired. Let me while on this subject quote the words of the Dublin *Daily Express*: "The Dublin agency of the Canadian Government has a stand (No. 27) which is worthy of a special word of mention and commendation. The display is really most interesting. It contains a number of specimens of ore, and a great many samples of cereals grown on the soil of that fertile and enterprising colony. Among the latter is a corn stalk 13 feet high, while the photographs exhibited give ocular demonstration of the handsome proportions of some of Canada's leading cities."

I could quote from many other equally appreciative sources to show the value and wisdom of continuing the work of making exhibits at the shows. Suffice it to say that

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they constitute a powerful educating factor, and the thousands who visited them must have carried away a deeper knowledge of the wonderful agricultural resources of Canada.

As doubtless Mr. Webster will deal with this subject in his report, it will not be necessary for me to dwell further upon it.

It was not considered advisable last winter to deliver lectures; but this season we determined to make an effort in that direction. Early in October I asked and obtained the assistance of Mr. O'Kelly and Mr. Webster, and we delivered an illustrated lecture on Canada in Lisburn. The attendance was not large, but there were many prominent citizens present. Almost immediately afterwards I received a number of invitations which were accepted by Mr. Webster and myself. We have addressed crowded meetings in many localities. At very few places have we had reason to complain of small attendance. Priests, ministers, teachers, magistrates, representatives of every class have extended to us the kindest treatment and consideration. The work is still progressing and we have before us invitations sufficient to occupy us for months. I know of no more valuable method of imparting acquaintance with the advantages offered by Canada than the illustrated lecture. It may be fatiguing to speak night after night, but the consolation we derive from the encouraging applause, and the interest manifested by our audience can be understood much better than expressed.

In connection with our lectures, we have reason to thank the local press for their flattering reports.

Let me, in conclusion, mention the great publicity given to Canada by reason of the visit of several members of the Government. We had Hon. Mr. Mulock and Hon. Mr. Fisher. Their addresses delivered in Dublin have had excellent effects.

I should bestow a word of praise upon more than one Canadian clergyman for interviews reported in the press, lectures delivered, &c.

Once more we look to most encouraging results during the year 1899.

I have the honour to be, my Lord,

Your most obedient servant,

C. R. DEVLIN.



## No. 11.

## REPORT OF MR. EDWARD O'KELLY, AGENT IN IRELAND.

HARBOUR BOARD BUILDINGS,

LONDONDERRY, 31st December, 1898.

The Right Honourable Lord STRATHCONA,  
High Commissioner for Canada,  
London.

MY LORD,—I beg to submit to your Lordship my report dealing with emigration work in Ulster for the year ending this date.

In accordance with my instructions, I made monthly reports to you as you are aware.

As set forth in these reports, I attended with my exhibits of Canadian products the various agricultural shows held throughout the province of Ulster. The specimens in every case excited much attention and admiration, and in one case were the means of inducing a farmer, who was taking his family to Australia, to change his mind, and that of a friend of his, and go to Canada, where all are now comfortably settled.

The exhibition of our specimens at that show alone brought five people, and some fifteen thousand dollars to Canada, and I am convinced that the exhibition of good specimens of Canadian crops is the very best means of inducing settlers to go there. The agricultural shows are attended by just the class most likely to make good settlers, and who have means to reach, and in many cases bring some capital, to the country where the specimens are grown. Added to this, the agent has the best opportunity of informing people about Canada during show time, answering the numerous questions put to him, and drawing comparisons between the prospects of farmers in this country and Canada; he also has his stand fully supplied with pamphlets bearing out his statements, and giving all information necessary.

I also attended the fairs and markets throughout the country that I considered most likely to prove fruitful in settlers, and that I could reach, giving the necessary attention to my office work. At these gatherings I watched the distribution of our literature amongst the people, spending the day talking to all I could reach that had got the literature, and to many who joined in.

By the means I have mentioned, and by attending to correspondence arising out of our advertisements, I am able to say that Canada in the past year has got capital from Ulster exceeding my expectations for the first year, and also a better class of settlers, which means a good deal, because the people who went to Canada have written that they are satisfied with their prospects in districts so far removed from each other as Manitoba, Alberta, British Columbia, and the Yukon. Their friends at home are also pleased, and say so amongst their acquaintances.

I continue visiting the clergy, supplying them with literature, and I think I can state that the entire Protestant Church in Ulster is in favour of those who are not in the way of succeeding at home emigrating to Canada, in preference to seeking employment in the manufacturing centres of the United Kingdom. They thoroughly understand that Canada is the country to make a home, and raise a family in.

The Roman Catholic clergy in most cases prefer their people continuing the struggle for existence at home, hoping for better times. By means of prepaid passages, which do not diminish the resources of those who remain at home, some thirty thousand of the youth of both sexes leave Ireland every year to continue the work largely done by their

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forefathers of developing the United States, and no amount of confidence in the resources of Canada can bring Irish people of scanty means there, without, at least, as much aid as they are getting by applying to their friends in America.

For the coming season, judging by the past, and from correspondence at present going on, I expect Ulster will favour Canada with good settlers and a fair amount of capital, but I know that so long as practically subsidized emigration to the States continues without aid being given to those preferring Canada, so long will the mass of emigration, even from fairly well to do, and thoroughly loyal Ulster, tend that way. The people tell me so. The northern press bears out this contention, as your Lordship will see by reading enclosed copy of a leader in the Belfast *Evening Telegraph*, a paper with about the largest circulation of any in Ireland.

For persons with some capital, I find South Africa the keenest competitor Canada has, a good deal of money having been sent home from there, apparently much more than from Canada, which state of things I account for to the advocates of emigration to Africa, by explaining to them that Canada offers more inducements to the ordinary settler to invest in land and extend himself in farming than Africa possibly could.

I have visited the County Donegal very little, the numbers wishing to emigrate from that poor county not having the means to do so up to this, except when their way is paid by friends in America ; but a sum of some three hundred thousand pounds having been allocated for railroad building there, I expect very many will use their earnings to reach a country where there is a chance of their thriving. I therefore look forward to a busy time in Donegal later on.

I think it only right to mention that the Harbour Board Commissioners through their secretary, Mr. E. A. Hamilton, informed me that I could have the use of one of their best offices, as Canadian agent. The office is large, well lighted, and fully furnished, facing the quay, and the use of it enables me to see many I might otherwise miss, besides enabling me to display my specimens and maps to the best advantage. The secretary is an enthusiast about Canada—four of his family succeeding extremely well there.

I have the honour to be, my Lord,

Your obedient servant,

EDWARD O'KELLY.

## No. 12.

## REPORT OF MR. JOHN WEBSTER, AGENT IN IRELAND.

14 WESTMORELAND STREET, DUBLIN, 6th January, 1899.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—I beg to submit the report of the work performed by me during the year ending 31st December, 1898.

Acting upon your instructions, in the month of January, during the absence of Mr. Devlin, I took charge of the Dublin office, and even after Mr. Devlin's return I gave much care and attention to the office—spending in it all my time when in Dublin. The extensive advertising which was adopted in the early part of the year produced most fruitful results, which were brought into striking evidence by the steady stream of callers at the office and the volume of correspondence requiring our attention.

The importance of advertising in the Irish press cannot be over-estimated.

I have had a busy year, visiting fairs and markets, thus coming into contact with the agricultural class. No better means can be given us of meeting the farmers, imparting knowledge and circulating literature. My long practical experience as a farmer has helped me materially in my work, enabling me to answer questions as to the advantages which Canada offers to the farmer as a field for emigration.

Since the establishment of the Dublin offices I have worked in conjunction with them; and when in the country attending fairs, I keep in touch with Mr. Devlin, who forwards to me a list of names of those making inquiries. As much as possible I strive to visit them, convinced as I am that far better results can be obtained by a personal interview than by correspondence.

While on the road in the towns which I visit, I make a point of placing Canadian hand-books on the tables of libraries, clubs and public buildings.

You are aware that the agricultural shows of Ireland are conducted on an elaborate scale, and that all sections of our population take the keenest interest in them. We thought proper to make at many of these shows an exhibit of Canadian products. We have shown samples of wheat, oats, barley, rye, mammoth corn and other cereals. We have had the satisfaction of being able to make an excellent display of minerals taken from the British Columbia mines as well as from other portions of Canada. Views of the leading cities, photographic scenes depicting the industrial life of the Dominion, and samples of wood have been shown.

At our stand we kept a large supply of literature dealing with the resources of the country.

The exhibit constitutes a splendid object lesson. From the first to the last hour of the show our stand was a centre of attraction, and the newspapers spoke in the highest terms of it.

We made such exhibits at :—

Royal Dublin Society Show . . . . .	April 19th and 20th.
Limerick Show . . . . .	July 2nd and 3rd.
Cork Show . . . . .	July 7th, 8th and 9th.
Hollymount, Co. Galway . . . . .	July 27th and 28th.
Dublin Horse Show . . . . .	August 23rd, 24th, 25th and 26th.
Dublin Winter Show . . . . .	December 5th, 6th and 7th.

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Special illustrated numbers of Canadian newspapers which were sent to us were in great demand, and I would wish to lay particular emphasis on the wisdom of circulating such papers. They are extensively read and eagerly sought after.

The value of the exhibit is best understood when it is borne in mind that the farmer never ignores it, or considers it unworthy of special attention. He sees exactly what the Dominion can produce. It is an invitation for him to go thither.

My experience is that it is best to make a good exhibit, worthy of the country represented, or to make none. It may prove somewhat expensive, but in the end the results justify the outlay.

During the winter season I am busily engaged delivering lectures on Canada, averaging three per week. I may mention that I have thirteen invitations for this month and expect more. The lecture delivered is illustrated by means of lantern slides, and we have an excellent acetyline lamp. So far we have not been called upon to pay rent for halls. On the contrary the clergyman, club or society extending the invitation makes all the arrangements of the meeting, supplying hall, light and even advertising the entertainment. We do not discriminate but cheerfully accept the invitation—no matter the source from which it comes. Hence it has happened that some of the lectures were delivered at the request of dignitaries of the Church of Ireland, others at the request of dignitaries of the Roman Catholic Church.

Mr. Devlin and I also have spoken in leading educational institutions. Indeed the encouragement received has been such that we propose continuing our lectures throughout January, February and March. A better idea of the popularity of the illustrated lecture may be gleaned from the fact that in certain cases where it was impossible to deliver a lecture, we have been requested to lend the slides, and they have been used on several occasions by clergymen, teachers and others. We are always pleased to meet this request when possible.

The nature of my correspondence is pretty much the same, I presume, as that received by other agents. It has been much more considerable this year than during the previous twelve months. At any time that business or some engagement calls Mr. Devlin away, I attend to the correspondence of the office and always help my colleague in this matter. I am glad to say that we have worked harmoniously together and we have done all in our power to promote the interests of Canada and justify the confidence reposed in us.

We have just entered upon a new year, and the indications at this moment are that it ought to prove a successful one.

I have the honour to be, my Lord,

Your obedient servant,

JOHN WEBSTER.

## No 13.

## REPORT OF MR. A. BODARD, AGENT IN FRANCE AND BELGIUM.

PARIS, 25TH DECEMBER, 1898.

To Lord Strathcona,  
High Commissioner for Canada,  
London.

MY LORD,—In the last report I addressed to you, in April, I wrote my personal opinion about the continental emigration. I told you the agricultural classes in Europe become every year poorer and that many farmers worth \$300 or \$400 would like to come to Canada, if the money for their passage was advanced to them so that they could settle on a lot with the sum in their possession, which is sufficient to make a beginning.

I gave my frank opinion that if Canada offers no more inducements than she now does to continental farmers with some money, principally from France, Belgium and Switzerland, the emigration will not increase, will remain about the same, and perhaps will decrease. My opinion was right, and I think the number of French and Belgian emigrants is the same as last year, but the number would soon increase, if the passages were advanced to those going to Manitoba, &c.

To increase the immigration to Canada, I adopted the following scheme.

I told you a large number of French farmers do not like to go to the North-West Territories, because they find the rates of passage too high (\$200 or \$300 per family) and for other reasons and would prefer to settle in the province of Quebec. Unfortunately nothing has been done until this year in that province to favour the French, Belgian or any other immigration. The law and regulations of this province have not been encouraging to settlement. The vacant lots were not easily reached; nothing was organized for the reception of settlers. But in 1897, Hon. C. Sifton put me at the disposal of Hon. A. Turgeon, Minister of Colonisation at Quebec, to found French colonies in that province.

I was there again, last May, delegated by several French farmers, and co-operated with the Department of Colonization at Quebec, as I did in 1897, to organize French colonies, the support of Hon. A. Turgeon and the Quebec Government for the success of our scheme being assured to me.

Behind Maria, Coplan, Paspebiac and Port Daniel, in Gaspesia, there is a beautiful country as yet unsettled. It is there I have decided to settle my French farmers, and found new colonies. I have bought for them cleared land, built houses where necessary to receive them, and when they arrive next spring, each family will have a little farm of 10 to 20 acres cleared, and a house and stables.

It is difficult for French and Belgian settlers to succeed when they settle in the woods. They are not accustomed to clear the land, and to insure their success, I advised them to buy a little cleared farm to begin with, and to take a wood lot behind, and pay the French Canadian to clear their land at so much per acre.

The French farmers come with means; with their money they give work to French Canadians. Our scheme is the best ever offered until now, for it favours at the same time French colonization and the repatriation of the French Canadians from the States. The Canadian Government tries to favour that repatriation and I think our scheme is the best to be adopted to make repatriation a success.

Until now the Government offered nothing to decide those people to come back from the States and settle in Canada; a wood lot in the province of Quebec with no roads to get to it is not a sufficient attraction. Our scheme offers better and real advantages, for it furnishes work and living to all. But the best proof that it is the right scheme is

## Department of the Interior.

this : I advertised in the papers that at Port Daniel, \$8 per acre would be paid (by my French farmers) to clear land, to all willing to do that work and promising to give the crops of the first year on the cleared land, to those having done the work, and the parish priest of Port Daniel, Rev. A Gagnon, has already received nearly 300 applications for lots to settle upon, and to work on the lots of the Frenchmen.

The roads will be opened, the work being done in the winter, and next summer we will have a good mixed colony of French, Belgian and repatriated French Canadians in Gaspesia, in a territory where in 1897, there was nothing. I found several French colonies in Manitoba, and a good number of French farmers are settled north of Montreal, but my first real colony in the province of Quebec, and not the last, I hope, will be this one at Gaspesia.

Frenchmen and Belgians to succeed must be mixed with French Canadians, to learn the habits and the Canadian system of land culture. In the district of Saskatchewan the French emigration sent by me does not increase rapidly, for several reasons and principally, because the French Canadians do not go there, and without their aid French farmers have to gain for themselves an experience of the new country, and it discourages them.

With no French Canadians to clear the land and give them advice it would be hard for them to succeed either in the province of Quebec. I put the two elements together in Gaspesia, for their mutual benefit and for the benefit of the whole of Canada, and it will promote the colonization of a wild country.

A Frenchman of Bordeaux, M. Augereau, wrote to Hon. A. Turgeon. He intends to go to Canada with some friends and they will take with them some farmers to whom they will advance their passages, to be guaranteed by a mortgage on their lands. I have been in communication with M. Augereau, and his party will settle among my emigrants. But the Quebec law not allowing the mortgage of the homesteads, I saw the Minister on the subject, and the provisions of the Dominion Lands Act in that behalf will be adopted by the Quebec Government, as well as several reforms and changes suggested by the Colonization Congress held at Montreal on the 23rd of November.

Mr. E. Marquette, Immigration agent of the province of Quebec at Montreal, is the agent of the Self Help Society of England. Each year that Society sends to him many English poor families to settle in the province of Quebec. Their passages are advanced to them or free. Mr. Marquette has money in hand to feed them, or pay their railway fares in Canada. Before they arrive, he prepares everything for their reception. I do the same, but the families I bring to Canada are only farmers with money enough to settle, and are not sent by charity. Every year I am more strict in the choice of my emigrants. No one from the towns is allowed by me to come to Canada to settle in our towns.

I am of opinion the best way for an agent to promote emigration is to do what I have done myself, and what Rev. F. Morin is doing, viz : to go and work principally in winter ; come to Canada in summer with the families induced to come, and help them to settle. It encourages them, their success is more certain and the emigrants trust more the agents who induced them to come to Canada than any other agents.

I must add that what I have done is without any remuneration from the intending settlers. Being paid by the Government, my help is absolutely free to them ; my work, my time are entirely devoted to the success of my settlers.

In 1898, the majority of my settlers went to Winnipeg, Notre Dame de Lourdes, Souris, Lake Dauphin, Deloraine, Assiniboia and Saskatchewan ; others north of Montreal. The above is what I have done in the present year, and I think my work is in the interests of Canada, and to promote the colonization of our adopted country, superior even to France for farmers.

Your obedient servant,

A. BODARD.

## No. 14.

## REPORT OF MR. P. FOURSIN.

*(Translation.)*

PARIS, 25th January, 1899.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—I do not need to repeat to you the explanation of the conditions by which the colonization service of Canada is affected in France. You are aware that the French administration, taking as a basis the absence of a direct line of steamers between the two countries, refuses to grant a formal authorization of our work, and confines itself to a tolerance, which does not, however, permit the use of the ordinary means of publicity and of a direct propaganda.

Our work can only be done by personal relations, by special correspondence with each likely settler, by going about to see those who appear interested, or likely to become good local correspondents, and finally by receiving at the office of the Commissioner for Canada, 10 rue de Rome, all those interested and whom such a propaganda, thus carried on, attracts there. On the other hand, the paper *Paris-Canada*, which is regularly addressed to useful correspondents, forms a permanent link which takes the place of the great amount of advertising done by the agents of the steamship companies, which often results in the emigration of persons quite unfit for colonization.

To recapitulate, it may be said that each effort has a fixed object, and that every result is efficiently and definitely attained.

It is thus that the French settlers sent out through my agency, having been carefully chosen have fully succeeded, and that their letters to their friends and relations constitute a great assistance to our propaganda. Thus, as there are actually country people, originally from all the departments of France, and even from Algiers, successfully settled in the province of Manitoba and in the North-West Territories, one can say that Canada is now very well known as a country of great resources, and very thoroughly appreciated by the entire French agricultural class. There has never been any check to counteract this good impression. It is all due to the careful selection that is made before the departure of our settlers from France. But you will easily understand that this method, which is the only one which we can employ, provisionally, exacts much work and minute attention, expensive moving about, and small immediate results.

It is not until about the end of March that the settlers who are now preparing, propose to embark. Judging by their letters and the crowd of those who present themselves at our office, the number of these will be considerably higher than in preceding years. The work resulting from this has not allowed of my taking long journeys. It was with difficulty that I was able to absent myself to go and visit the correspondents when it seemed to me urgent, and when I could make the trip by rail, going and returning on the same day. At the Commissioner's office the day is entirely taken up in receiving the people who come, often a long distance, to obtain direct information, that which they have seen in the pamphlets appearing to them doubtful or insufficient. It is thus that I have received the visit of Mr. T. Hutz, of Chambéry (Savoy), who represented several Savoyard families, who think of going to Manitoba next spring.

I am, my Lord,

Your obedient servant,

P. FOURSIN.

# Department of the Interior.

No. 15.

## REPORT OF MR. D. TRÉAU DE CÉLI, AGENT IN BELGIUM.

ANTWERP, 15th January, 1899.

To the Right Honourable  
The High Commissioner for Canada,  
London.

MY LORD,—I have the honour to submit a report of my work for the last half year of 1898.

Having entered upon duty on 2nd July, I made, before leaving for Belgium, an extended visit to Manitoba and the North-West Territories, with a view to meet as many Belgian families as possible and to obtain from them an insight into their prospects for the future and their successes since their arrival in Canada. It is pleasing to state that in every instance I met with well satisfied settlers, and in many cases greater results had crowned their efforts than had been looked for, and a number of families, who on their arrival in Canada, only a few years ago, had very little money left after paying their travelling expenses, were in a prosperous condition.

I obtained from every family I visited all possible information.

Returning from the West, I went to visit the principal colonization centres of the Province of Quebec, namely, the County Labelle, the Lake Nominique and the Lake St. John districts, also the counties of Arthabaska, Drummond and Nicolet, with the intention of giving all desirable information to those who by reason of distance, or for fear of loneliness would prefer the older province to Manitoba or the North-West.

Arriving at Antwerp about the end of September, I visited some of the principal farming centres, especially those from where people had left for Canada, and where I could interest friends and relatives. In many instances my reports corroborated letters previously received.

I am sorry to state that Canada, and the splendid inducements offered for settlement, are little known in Belgium, and less in the Flemish provinces, but I feel confident that as soon as these people know our country, their interest will awaken, and the best results will be produced.

I have distributed almost all the literature in my possession and have commenced last month a series of illustrated lectures, and will continue the distribution uninterruptedly, as soon as my Flemish pamphlets arrive, as I consider that lectures are only really beneficial when confirmed and recalled to mind by the reading of literature on Canada.

I have also commenced a little necessary advertising, as authorized by you, and numerous inquiries are daily made.

Emigrants from Belgium have left in former years, in great numbers for Brazil and the Argentine Republic, where great advantages were offered, such as free or assisted passage, cash advances at low interest for settling purposes, &c., &c., but most of these advantages have been cancelled, and Canada on its own merits can certainly compete with any of these countries.

I have travelled extensively through the Flemish provinces and visited also part of Holland.

The time to interest Belgium in our country could not be better chosen; the exceptional density of the population here makes emigration a necessity, and it is very encouraging to state, that people in the best ranks of society understand this necessity, and seem willing to give a helping hand to those who intend to leave this country. A proof hereof exists in the projected foundation of a Colonization Society, which intends



sending delegates to Canada, next spring, in order to secure a suitable locality for a numerous Belgian Colony.

From inquiries and correspondence, I expect for the present year, individual emigration to be very satisfactory, but it will take all next summer for most of the people who already contemplate emigrating with their families to decide and get ready.

In order to convince the farmers here, of the exceptional quality of our grain and other farm produce, it would be necessary to attend this summer the agricultural shows and fairs and to exhibit a large number of samples of grain and other produce of Canada.

It is with great pleasure that I thank the London office for their hearty support and prompt information on all matters concerning the success of my mission.

I have the honour to be, my Lord,

Your obedient servant,

D. TRÉAU DE CÉLI.

Department of the Interior.

# REPORTS OF AGENTS IN EASTERN CANADA.

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## No. 1.

### REPORT OF THE IMMIGRATION AGENT AT ST. JOHN, N.B.

(S. GARDNER.)

ST. JOHN, N.B., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit a report showing the operation of this agency during the year ended 31st December, 1898.

The immigrant arrivals are shown on the accompanying schedules.

#### SATISFIED SETTLERS.

All who bought farms and other properties and permanently settled in this province are well pleased with their purchases.

Quite an increase of arrivals over last year has taken place and a good class of people have come in.

The farm labourers are equally pleased with their position and many of them are looking forward to settling on lands of their own, which are now easily obtainable.

#### NUMEROUS INQUIRIES.

As usual, I am in receipt of many applications from Europe, the United States, West Indies and elsewhere for particulars of the province, as to climate, nature of the soil and water supply. These receive prompt attention.

#### NEW BRUNSWICKERS RETURNING HOME.

Still they keep coming, bringing their all with them, principally to settle on farms. These people principally are from the United States.

#### IMMIGRANT ARRIVALS.

The immigrants passing through this agency and other inlets the past year and not reported at Halifax or Quebec were 2,770, bringing cash \$32,094 ; effects, \$74,232. The customs entries at this port were 266 ; effects, \$31,302 ; an increase over last year.

The travel by the International Line Steamships between Boston and St. John for 12 months was, ins 15,446, outs 6,240, a decrease from last year, the Yarmouth and Boston route being the cause.

## NEW SETTLERS IN THE COUNTIES.

Albert	County	68
Sunbury	do	9
Kent	do	119
King's	do	173
St. John	do	4
Westmoreland	do	430
York	do	549
Charlotte	do	113
Restigouche	do	99
Northumberland	do	222
Carleton	do	485
Gloucester	do	166
Victoria	do	218
Queen's	do	80
Madawaska	do	35
Total		2,770

## ALBERT COUNTY.

Sixty-six returned Canadians from the United States, and two United States citizens, bringing all they possessed, settled finally on farms. Among them were three from the Klondike with means, who bought property and are now content to stay.

## SUNBURY COUNTY.

Nine returned Canadians from the United States bought property and settled permanently.

## KENT COUNTY.

All returned Canadians. All say New Brunswick is the best place. The exodus is at a standstill.

## KING'S COUNTY.

When asked why they returned, the reply is: "If we had worked as hard here as we had to in the States, we should now own good homes here instead of being nearly ruined. We are very glad to get back."

Several farms sold lately ranging from \$200 to \$2,000. Churches, schools and mills within reach of all. Cheese factories at every corner. My correspondent adds, "We still have room and want more good citizens, and receive them with open arms."

## ST. JOHN COUNTY.

Four Canadians returned from the United States to their farms, having had enough of the "exodus fever."

## WESTMORELAND COUNTY.

Four hundred and sixteen Canadians (French), 10 United States citizens, 4 Scotch. All from the United States.

## Department of the Interior.

### YORK COUNTY.

Five hundred and forty-nine returned Canadians from United States. Those who passed through McAdam Junction (20 families) had movables valued at \$2,420, and there were 269 consignments for other parts, with 10 cars and 9,466 packages of household effects.

### CHARLOTTE COUNTY.

Seventy-five returned Canadians, 38 United States citizens, bringing effects, \$12,076, and cash, \$4,550.

### CARLETON COUNTY.

Four hundred and eighty-five Canadians, 100 United States citizens. Bona-fide settlers, bringing effects worth \$15,062, and cash, \$11,350.

### VICTORIA COUNTY.

Two hundred and two Canadians, 10 Danes, and 6 United States citizens. The county prosperous. Scotch colony especially doing well.

### GLOUCESTER COUNTY.

One hundred and sixty-six Canadians returned from the United States and settled. A great change among the farmers. Thanks to the local government supplying seed wheat, they now raise their own flour.

### QUEEN'S COUNTY.

Some English and American miners have come to reside and to work at the Grand Lake Coal Mines.

### MADAWASKA COUNTY.

Thirty-five Canadians returned from United States. A few purchased farms, others settled on their old homesteads.

### RESTIGOUCHE COUNTY.

Ninety Canadians returned from the United States; 8 English arrived from Great Britain, and 1 Newfoundlander settled during the year. The exodus to the States has ceased, but quite a number of both sexes have gone to British Columbia on their way to the Klondike.

### NORTHUMBERLAND COUNTY.

A hundred and ninety-seven Canadians returned from the United States and settled on their old homes. Four English, 2 Austrians, 1 German and 18 from Magdalen Islands also arrived and settled in the county.

### CONCLUSION.

The number of immigrants quoted above, viz., 2,770, and by the Beaver and other lines 976, makes a total of 3,746, an increase over last year of 704.

I have the honour to be, Sir,

Your obedient servant,

S. GARDNER,  
*Dominion Government Immigration Agent.*

Statement of Arrivals at St. John, N. B., for 1898.  
CABIN FOR UNITED STATES.

Date.	SEX.				Total Number of Souls.	NATIONALITIES.						OCCUPATION.				Destination.
	Male Adults.	Female Adults.	Boys under 12.	Girls under 12.		Armenians.	English.	Russian.	Welsh.	Turks.	United States.	Clergy.	Clerks and Traders.	Not Classified.	Number of Souls.	
March .....	2	1	3	1	7	6	1	1	.....	.....	.....	2	5	7	} United States.	
April .....	4	1	1	.....	6	.....	.....	2	4	.....	4	1	0	5		
May .....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	0	1		
September .....	1	.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	1	2		
Totals.....	8	2	4	1	15	6	2	1	2	4	4	5	6	15		

S. GARDNER,  
Dominion Government Immigration Agent.

St. John, N.B., 31st December, 1898.

Department of the Interior.

Statement of Arrivals at St. John, N.B., for 1898.

CABIN FOR CANADA.

Date.	SEX.		Total Number of Souls.	NATIONALITIES.										OCCUPATION.					DESTINATION.							Total.						
	Male Adults.	Female Adults.		Boys under 12.	Girls under 12.	English.	Irish.	Scotch.	West Indies.	Welsh.	German.	French and Bel- gians.	Canadians.	China.	Other Countries.	Total.	Farmers.	Mechanics.	Clerks and Traders.	Miners.	Not Classed.	Total.	Nova Scotia.	New Brunswick.	Retired Canadians.		Quebec.	Ontario.	Manitoba.	N.W. Territory.	British Columbia.	Hong Kong.
January	14	8	20	4	22	2	2	1	1	1	2	2	2	2	23	2	2	16	11	11	29	22	4	3	2	2	1	1	2	2	23	
February	21	7	31	1	15	2	1	1	1	1	3	3	3	3	31	3	3	15	11	11	31	1	4	8	4	1	10	2	6	2	31	
March	77	23	118	7	70	9	13	13	1	1	1	1	4	4	118	21	26	30	41	41	118	2	26	20	4	8	21	11	24	2	118	
April	84	24	118	6	54	9	16	8	1	1	6	8	8	8	118	20	19	34	12	33	118	45	2	14	9	7	19	12	2	10	118	
May	11	11	22	3	10	3	3	3	8	1	1	1	1	1	31	3	3	7	1	20	31	21	2	6	2	7	7	7	7	31		
June	7	14	21	3	11	4	4	4	12	4	4	4	4	4	27	1	1	6	6	20	27	9	7	4	7	8	8	8	7	27		
July	25	27	52	6	11	6	4	4	44	10	2	10	2	2	69	2	2	11	11	45	69	26	16	14	2	2	3	3	2	69		
August	11	4	15	1	6	6	7	7	7	3	3	3	3	3	16	2	2	11	5	16	16	6	6	6	1	1	1	1	1	16		
September	7	1	8	1	3	3	3	3	2	1	1	2	1	1	8	8	7	7	1	8	3	4	4	4	1	1	1	1	2	8		
October	9	9	18	1	17	1	1	1	1	1	1	7	1	1	9	7	7	2	2	9	9	2	6	6	5	2	1	1	1	9		
November	33	12	45	3	24	1	1	6	6	10	4	4	4	4	50	5	21	14	10	50	2	2	7	5	2	1	1	4	4	50		
December	5	5	10	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Totals	304	132	436	39	229	20	45	90	4	4	8	80	11	20	511	52	80	169	13	197	511	139	104	68	37	28	54	13	46	12	10	511

S. GARDNER,  
Dominion Government Immigration Agent.

STATEMENT of Immigrant arrivals at St. John, N.B.  
STERAGE PASSENGERS FOR CANADA.

Date.	SEXES.				NATIONALITIES.										OCCUPATION.						DESTINATION.						Total.							
	Male Adults.	Female Adults.	Boys under 12.	Girls under 12.	Total.	English.	Irish.	Scotch.	German.	French and Bel- gian.	Canadians.	Austrians.	Danes.	Finland.	Other Countries.	Total.	Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Clerks and Traders.	Female Servants.	Not Classified.	Total.	Lower Provinces.	Quebec.		Ontario.	North-West Ter.	British Columbia.	Manitoba.	Retired Canadians.	Newfoundland.	
January	42	8	2	5	57	23	6	15	3	1	5			4	57	3	2	24	13	2	24	13		15	57	14	8	13	10	12			57	
February	12	1	1	1	15	7	2	5	1	1				15	2	1	5	5	5					2	15	5			2	7			15	
March	60	9	2	1	72	26	4	4	2	2	18		6	14	72	9	22	25	4	5	4		12	72	13	3	9	6	14	18		4	72	
April	33	7	7	3	50	26	4				2			18	50	7	17	11	1	11	1		13	50	26	5	7	3	9			50		
May	16	8	29	15	68	65	3							68	68	16						8	44	68	68	68						68		
June	9	19	3	2	33	17	16								33	1		1	3	1			11	33	33	33						33		
July	1				1										1	1								1	1	1							1	
August	5				5	5									5	1		4						5	5	5							5	
September	23	5	3	11	42	20	2			2	2		8	8	42	8		5	3				26	42	3	8	11	3	17			42		
October	118	2	2		122	104	1	5			1		9	2	122	3		110	3				5	122	110	2	3	1	5			122		
November	319	59	49	38	465	294	14	44	11	5	26	2	6	17	465	30	39	33	179	29			27	128	465	278	26	43	7	25	64	18	4	465
Totals	319	59	49	38	465	294	14	44	11	5	26	2	6	17	465	30	39	33	179	29			27	128	465	278	26	43	7	25	64	18	4	465

S. GARDNER,  
Dominion Government Immigration Agent.

St. John, N.B., 31st December, 1898.

Department of the Interior.

STATEMENT of Immigrant arrivals at St. John, N.B.  
STEERAGE PASSENGERS FOR UNITED STATES.

Date.	SEXES.				NATIONALITIES.													OCCUPATION.						Total							
	Male Adults.	Female Adults.	Boys under 12.	Girls under 12.	Total.	English.	Irish.	Scotch.	Germans.	Danes.	Russians.	Russian Jews.	Austrians.	Finland.	Galicians.	United States.	China.	Canadians.	West Indies.	Swedes.	Other Countries.	Total.	Farmers.		Mechanics.	Clerks and Traders.	Female Servants.	Farm Labourers.	General Labourers.	Not Classified.	
January.	93	37	17	13	160	4	2	2	10	1	130	9	2	2	2	2	2	1	2	1	10	12	191	2	83	9	4	2	2	60	160
February	95	49	23	24	191	4	4	2	23	1	135	19	6	4	2	4	2	1	2	1	10	12	191	6	71	3	3	15	96	191	
March	241	69	35	37	382	16	2	1	30	1	275	26	4	2	2	2	2	2	2	5	14	169	23	178	14	2	3	24	140	382	
April	106	33	12	18	169	5	4	2	13	1	112	12	2	2	2	2	2	1	1	1	5	14	169	5	78	2	2	10	63	169	
5 <sup>th</sup> June	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
November	180	65	16	27	277	10	4	2	24	2	183	16	4	7	4	1	1	1	1	4	5	247	6	123	6	5	3	109	247		
December	63	9	6	1	78	1	1	1	1	1	29	3	7	5	1	1	1	1	1	1	18	78	8	8	8	5	55	10	78		
Totals.	738	262	109	119	1,228	39	8	1	100	4	864	15	85	25	7	9	2	2	1	19	47	1,228	42	542	34	11	3	118	478	1,228	

S. GARDNER,  
Dominion Government Immigration Agent.

St. John, N.B., 31st December, 1898.



LIST OF RETAIL PRICES OF THE ORDINARY ARTICLES OF FOOD REQUIRED BY THE WORKING CLASSES.

Bacon, per lb.....	\$ 0 11 to	\$ 0 14
Bread, wheat, 2 lb. loaf.....	6 to	7
Butter, salt, per lb.....	16 to	18
do fresh, per roll.....	20 to	22
Beef, cut, per lb.....	8 to	12
do per quarter.....	4 to	7
Beer, per quart.....		10
Candles, mould, per lb.....		12
Coal oil, per gallon.....	20 to	24
Coffee, ground, per lb.....	24 to	30
Corn meal, per 100 lbs.....	1 25 to	1 50
Eggs, per doz., according to season.....	10 to	30
Flour, per brl., best, 196 lbs.....	5 00 to	6 00
do do 2nd best.....	4 00 to	5 00
Firewood, per cord, city measure, equal to 1¼ cords standard measure.....	4 50 to	6 00
Ham, per lb.....	12 to	14
Shoulder, per lb.....	10 to	12
Herring, per brl. 200 lbs.....	3 00 to	4 00
Mustard, per lb.....	25 to	30
Milk, per quart.....	5 to	6
Mutton, per lb., cut.....	7 to	10
do do quarter.....	5 to	8
Oatmeal, 100 lbs., rolled.....	2 00 to	3 00
Pepper, per lb., ground.....	15 to	20
Potatoes, per bushel.....	20 to	30
Pork, fresh cut, per lb.....	8 to	10
do do per quarter.....	6 to	7
Rice and corn, per lb.....	5 to	6
Soap, yellow do.....	5 to	6
Salt do.....		1½
Tea, black do.....	25 to	40
Tea, green do.....	40 to	50
Tobacco do.....	35 to	40
Veal do.....	5 to	8

LIST OF RETAIL PRICES OF RAIMENT REQUIRED BY WORKING CLASSES.

Coats, under, tweed.....	\$ 2 50 to	\$ 3 00
do over.....	3 00 to	4 50
Trowsers do.....	2 00 to	2 50
Vests do.....	1 00 to	2 00
Shirts, flannel, all wool.....	50 to	75
do cotton.....	50 to	1 00
do under, all wool.....	30 to	40
do do cotton.....	25 to	30
Hats, hard felt.....	65 to	75
Socks, woollen.....	25 to	30
do cotton.....	12 to	25
Blankets, all wool, per pair.....	2 50 to	3 50
Rugs, each.....	1 00 to	1 40
Flannel, all wool, per yard.....	25 to	30
Cotton shirting do.....	10 to	20
do sheeting do.....	40 to	60

## Department of the Interior.

Canadian cloth, tweed, per yard.....	1 20 to	2 00
Shoes, men's, per pair.....	1 50 to	2 00
do women's do .....	75 to	1 00
Boots, men's do .....	2 00 to	3 00
do women's do .....	75 to	1 50
India rubber shoes, men's .....	60 to	70
do do do women's.....	50 to	75

S. GARDNER,

*Dominion Government Immigration Agent.*

St. JOHN, N.B., 31st December, 1898.

## No. 2.

## REPORT OF THE HALIFAX AGENT.

(J. A. KIRK.)

HALIFAX, N.S., 2nd January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit, for your information, a report of the arrivals of passengers at this agency during the year ended 31st December, 1898.

The total number of passengers arriving was 13,201, of whom 3,498 were cabin and 9,703 were steerage.

Of the cabin passengers 1,845 were adult males, 1,351 adult females and 302 were children, of whom 157 were males and 145 females.

Of the 9,703 steerage passengers 4,584 were adult males, 2,330 adult females and 2,798 were children, of whom 1,451 were males and 1,338 females.

Of the 3,498 cabin passengers 3,353 were destined for Canada and 145 for the United States.

Of the 9,703 steerage passengers 8,149 were destined for Canada and 1,554 for the United States.

The total arrivals of cabin passengers for the year 1897 were 8,330, and for 1898 3,498, a decrease of 4,832. As the steamships' passenger lists previous to 1898, did not give the ultimate destination of cabin passengers it is not possible to determine whether the decrease in this class was in passengers for Canada or for the United States.

The arrivals of steerage passengers as compared with 1897 were as follows:—

	1897.	1898.	
Canada.....	5,032	8,149.....	3,117 Increase.
United States ...	1,533	1,554.....	21 “
	<hr/>	<hr/>	
Totals.....	6,565	9,703.....	3,138 “

An increase of steerage passengers for Canada over 1897 of 3,117 and for the United States of 21.

## CLASS OF IMMIGRANTS.

The arrivals of immigrants during the year were chiefly of the agricultural class, and compare favourably with those of any previous year. A very large majority were destined for Manitoba and the North-West Territories, all of whom had sufficient means to carry them to their destinations, while many had money enough to purchase farms or to give them a good start on homesteads.

## HEALTH OF IMMIGRANTS.

The general health of the immigrants appeared to be good and the people well fitted to meet and overcome any difficulties they might experience in making a start in a new country.

## Department of the Interior.

### DETENTIONS OWING TO CONTAGIOUS DISEASES AND DEATHS.

Several of the passenger ships on arrival were found to contain contagious diseases, the passengers of which were treated at the Quarantine Station, where six children, ages ranging from six months to two years died, and two also died that were born at the station. Clean bills of health were furnished by the port physician for all who landed and were passed through.

### JUVENILES.

Five parties of children arrived during the year from the various homes, and one individual, numbering in all 327 souls, showing a decrease of 168 from the previous year.

### ARRIVALS OF PASSENGER STEAMERS.

Two hundred and twenty-two passenger steamers entered at this port during the year, which were met on arrival, and from which passenger lists were received. Of this number, 106 arrived between the hours of 6 p.m. and 6 a.m.

### INCONVENIENCE AND DISCOMFORT TO PASSENGERS.

I desire again to draw attention to the inconvenience and discomfort to passengers occasioned by their having to be landed in the freight shed, requiring them to pass through the shed and across two railway tracks, at times too, when cars are moving, rendering it absolutely dangerous in crossing, to reach the immigration hall. The increasing traffic through the shed makes it more and more necessary that passengers and their baggage should be landed on the hall side of the dock, to accomplish which some improvement must be made in the wharf.

### TREATMENT OF IMMIGRANTS.

The usual kindly treatment and every possible assistance, have been extended to the immigrants arriving, by the staff of this office.

### STATISTICS.

Tabular statements are attached as follows:—

- Statement A.—Monthly arrivals of cabin passengers.
- do B.—Monthly arrivals and destination of steerage passengers.
- do C.—Monthly arrivals of steerage passengers for the States.
- do D.—Sexes, occupations and destinations of nationalities for Canada.
- do E.—Comparative statement of monthly arrivals, 1897 and 1898.
- do F.—Comparative statement of nationalities, 1897 and 1898.
- do G.—Comparative immigration since 1869.
- do H.—Sexes, nationalities and destination of steerage by different lines.
- do I.—Juvenile immigration.

### CONCLUSION.

My sincerest thanks are due to the officials of the steamship and railway lines and others with whom I have come in contact, for their continued kindnesses and assistance given me in handling the immigrants.

I have the honour to be, Sir,

Your obedient servant,

J. A. KIRK,  
*Dominion Government Immigration Agent.*

## STATE

## SHOWING monthly arrivals

Months.	SEXES.				Totals.	DESTINATIONS.										Total.
	Adults.		Children.			Maritime Provinces.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Yukon.	Tourists.	Returned Canadians.	United States.	
	Males.	Females.	Males.	Females.												
January....	143	48	15	13	219	36	17	30	21	7	31	....	1	11	65	219
February....	358	77	22	20	477	67	46	60	63	14	91	....	....	35	101	477
March....	998	224	86	79	1,387	137	81	155	391	121	198	....	9	23	272	1,387
April....	1,456	534	425	299	2,714	179	87	223	1500	101	150	47	....	15	412	2,714
May....	529	459	420	383	1,791	207	3	....	1503	....	5	....	....	3	70	1,791
June....	270	254	169	206	899	58	....	1	480	260	2	....	....	2	96	899
July....	300	283	231	238	1,052	53	4	....	764	176	....	....	3	1	51	1,052
August....	86	31	7	3	127	100	2	1	....	....	....	....	....	4	20	127
September..	44	86	7	15	152	73	....	1	1	....	....	....	....	....	77	152
October....	45	138	14	21	218	114	3	....	....	....	....	....	....	....	101	218
November..	129	82	24	22	257	73	13	25	1	7	7	....	....	7	124	257
December...	226	114	31	39	410	37	42	57	54	19	17	....	1	18	165	410
Totals....	4,584	2,330	1,461	1,338	9,703	1,134	298	553	4778	705	501	47	14	119	1,554	9,703

HALIFAX, N.S., 31st December, 1898.

## Department of the Interior.

### MENT B.

#### of Steerage Passengers.

NATIONALITIES, CANADA.										OCCUPATIONS, CANADA.									
English.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	United States.	Canadians.	Other Countries.	Totals.	Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Clerks and Traders.	Miners.	Domestics.	Not Classed.	Totals.	
95	12	12	6	2	11	1	11	4	154	16	....	53	21	33	....	4	27	154	
250	20	18	6	9	12	2	35	24	376	59	4	145	25	51	....	28	64	376	
707	13	122	62	45	20	1	16	129	1,115	302	4	306	87	114	....	37	265	1,115	
940	53	91	60	74	24	....	12	1,048	2,302	368	10	598	70	73	73	68	1,042	2,302	
216	....	....	12	....	....	....	3	1,490	1,721	367	....	105	5	9	....	23	1,212	1,721	
49	....	7	12	....	....	....	2	733	803	184	....	51	3	4	1	14	546	803	
57	....	....	5	....	....	....	....	939	1,001	222	....	59	4	....	....	19	697	1,001	
84	1	12	....	....	6	....	4	....	107	2	....	59	7	....	....	20	19	107	
69	1	3	....	....	....	....	....	2	75	1	....	22	4	....	....	20	28	75	
108	3	5	....	....	....	....	1	....	117	1	....	17	2	6	....	53	38	117	
95	6	8	5	7	1	....	5	6	133	3	1	56	8	14	....	12	39	133	
129	10	13	8	24	7	4	15	35	245	28	....	76	9	18	2	28	84	245	
2,799	119	291	176	161	81	8	104	4,410	8,149	1,553	19	1,547	245	322	76	326	4,061	8,149	

J. A. KIRK,  
*Dominion Government Immigration Agent.*

STATEMENT A  
SHOWING monthly arrivals of Cabin Passengers.

Months.	SEXES.				NATIONALITIES.										DESTINATIONS.									
	Adults.		Children		English.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	United States.	Canadians.	Other Countries.	Totals.	Maritime Provinces.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Tourists.	Returned Canadians.	United States.	Total.
	Males.	Females.	Males.	Females.																				
January.....	114	50	14	13	191	80	1	10	2	10	87	1	191	191	43	24	5	5	4	18	52	74	92	191
February.....	222	80	12	3	317	114	4	22	95	22	74	1	317	317	50	27	7	7	7	33	106	72	13	339
March.....	230	84	11	14	339	197	6	9	10	9	107	1	339	339	50	27	7	24	7	33	106	72	13	339
April.....	227	120	26	15	388	207	3	12	3	4	147	6	388	388	92	58	19	18	17	17	32	146	6	388
May.....	102	119	19	18	258	50	2	19	2	3	179	6	258	258	49	32	19	18	17	17	26	180	3	258
June.....	94	141	6	13	254	71	2	47	3	8	133	1	254	254	41	32	19	18	17	17	26	180	3	254
July.....	155	214	14	17	400	43	2	184	171	192	120	1	400	400	36	41	1	1	1	191	133	172	1	400
August.....	182	177	14	11	384	69	2	74	3	74	116	1	384	384	40	1	1	1	1	208	117	17	3	384
September.....	149	103	5	11	268	70	2	41	2	41	153	1	268	268	42	2	1	1	2	102	116	3	3	268
October.....	124	119	14	7	264	66	1	2	1	2	99	1	264	264	44	3	4	1	7	29	135	2	2	264
November.....	126	69	10	9	214	89	3	6	2	6	109	1	214	214	33	6	5	2	7	29	135	2	2	214
December.....	120	75	12	14	221	84	3	2	2	6	122	1	221	221	67	3	5	2	8	7	29	135	4	221
Total.....	1,845	1,351	157	145	3,498	1,140	24	48	7	8	119	625	1,518	3,498	728	121	41	51	11	85	896	1,420	145	3,498

J. A. KIRK,  
Dominion Government Immigration Agent.

HALIFAX, N.S., 31st December, 1898.

Department of the Interior.

STATEMENT C  
Showing monthly arrivals of Steerage Passengers for United States.

Months.	SEXES.				NATIONALITIES.								OCCUPATIONS.											
	Adults.		Children.		English.	Irish.	Scotch.	German.	Scandinavian.	French and Bel- gians.	United States.	Canadians.	Other Countries.	Totals.	Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Clerks and Traders.	Miners.	Domestics.	Not Classed.	Totals.	
	Males.	Females.	Males.	Females.																				Totals.
January	20	27	10	8	29	2	8	5	9	21	65	2	11	3	4	8	37	65						
February	74	17	5	5	29	9	16	20	1	26	101	6	51	11	6	9	18	101						
March	185	64	12	11	117	5	9	70	3	67	272	30	116	16	16	31	56	272						
April	264	112	15	21	138	13	2	154	4	59	412	23	180	14	15	23	40	412						
May	43	26	9	1	70	70	2	14	14	14	96	1	34	5	3	17	10	70						
June	27	46	9	14	82	14	10	10	5	2	51	1	24	3	3	26	43	96						
July	15	25	5	6	39	15	10	10	5	2	51	1	14	1	1	22	14	51						
August	18	1	1	6	15	20	10	10	5	2	20	1	18	1	1	2	2	20						
September	17	48	6	6	74	11	4	77	3	77	77	11	11	4	2	28	32	77						
October	19	67	8	7	101	101	10	101	1	32	101	2	10	6	3	52	30	101						
November	47	47	17	13	124	40	10	41	2	79	165	19	33	3	2	27	50	124						
December	93	46	11	15	22	1	1	61	2	79	165	19	53	8	3	28	44	165						
Totals	822	526	99	107	756	13	19	91	351	4	18	2	300	83	14	564	74	54	33	288	444	1,554		

J. A. KIRK,

*Dominion Government Immigration Agent.*

HALIFAX, N.S., 31st December, 1898.



STATEMENT D  
SHOWING Sexes, Occupations and Destinations of the different nationalities remaining in Canada.

Nationalities.	SEXES.				OCCUPATIONS.										DESTINATIONS.						Totals.			
	Adults.		Children		Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Clerks and Traders.	Miners.	Domestics.	Not Classed.	Totals.	Maritime Provinces.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Yukon.		Tourists.	Returned Canadians.	
	Males.	Females.	Males.	Females.																				
English.....	1815	515	303	157	2790	401	10	965	187	218	34	250	725	2790	1013	169	359	638	209	256	19	14	13	2790
Welsh.....	9				9			4			5			9					2		5			9
Irish.....	70	38	6	5	119	22	2	35	1		1	22	27	119	12	11	39	32	5	18	1		1	119
Scottish.....	204	55	13	19	291	53	7	71	26	34	13	15	72	291	47	30	39	57	32	72	12		2	291
German.....	100	39	22	15	176	18		60	10	12		5	70	176	25	11	17	111	12	12				176
Scandinavians.....	110	33	10	8	161	16		75	6	6	7	16	35	161	3	5	37	84	9	16	7			161
French and Belgians.....	59	14	7	1	81	13		32	2	12		3	19	81	24	21	2	27	3	4				81
Russians.....	90	69	50	58	267	65		20	2	3		3	174	267	2	16	2	240	6	1				267
Russian Jews.....	11	3	2	4	20			6	2	3		1	8	20		6	7	7						20
Russian Finns.....	53	10	4	4	71	3		36	1		13	5	13	71		5	37	11	5	13				71
Russian Poles.....	17	12	7	6	42			17				2	23	42			4	40						42
Austrians.....	18	2	3	4	27	7		10		1			9	27		4	5	18						27
Hungarians.....	9	5	3	7	24	1		8				15	24		1		11	12						24
Galicans.....	1069	984	912	933	3928	938		161	4	1		2	2823	3928		4	3487	422	5					3928
Italians.....	8	3			11			4	1				3	11		4	5				2			11
Assyrians.....	2				2			2					2	2		2	2							2
Slavs.....	4				4			4					4	4			2							4
Bavarians.....	1				1			1					1	1			1							1
Bohemians.....	1				1			1					1	1			1							1
Icelanders.....	2				2			2					2	2			2							2
Romanians.....	4	1	2	2	9			2					5	9		9					1			9
Turks.....	1				1			1					1	1			1							1
Canadians.....	70	20	6	8	104	14		32	6	18		4	30	104		1								104
United States Citizens.....	5	1	2		8			2	1	2			3	8		7		1						8
Totals.....	3762	1804	1362	1231	8149	1553	19	1547	245	322	76	326	4061	8149	1134	298	553	4778	705	501	47	14	119	8149

J. A. KIRK,  
Dominion Government Immigration Agent.

HALIFAX, N.S., 31st December, 1898.

## Department of the Interior.

STATEMENT E.—Comparative Statement of monthly arrivals 1897 and 1898.

Months.	CANADA.				STATES.				TOTALS.			
	1897.	1898.	Increase.	Decrease.	1897.	1898.	Increase.	Decrease.	1897.	1898.	Increase.	Decrease.
January .....	184	154		30	57	65	8		241	219		22
February.....	371	376	5		80	101	21		451	477	26	
March .....	983	1,115	132		251	272	21		1,234	1,387	153	
April .....	1,546	2,302	756		353	412	59		1,899	2,714	815	
May .....	809	1,721	912		102	70		32	911	1,791	880	
June.....	316	803	487		94	96	2		410	899	489	
July.....	156	1,001	845		36	51	15		192	1,052	860	
August .....	120	107		13	57	20		37	177	127		50
September.....	90	75		15	141	77		64	231	152		79
October.....	88	117	29		109	101		8	197	218	21	
November.....	184	133		51	167	124		43	351	257		94
December.....	185	245	60		86	165	79		271	410	139	
Totals.....	5,032	8,149	3,226	109	1,533	1,554	205	184	6,565	9,703	3,383	245

J. A. KIRK,

*Dominion Government Immigration Agent.*

HALIFAX, N.S., 31st December, 1898.

STATEMENT F.—Comparative Statement of Nationalities for Canada, 1897 and 1898.

Nationalities.	1897.	1898.	Increase.	Decrease.
English.....	2,592	2,799	207	
Irish.....	91	119	28	
Scotch.....	221	291	70	
Germans.....	93	176	83	
Scandinavians.....	147	161	14	
French and Belgians.....	82	81		1
Other Countries.....	1,806	4,522	2,716	

J. A. KIRK,

*Dominion Government Immigration Agent.*

HALIFAX, N.S., 31st December, 1898.

## STATEMENT G.—Comparative Immigration, 1869 to 1898, inclusive.

Year.	SEXES.				NATIONALITIES.					Remarks.
	Males.	Females.	Children.	Totals.	English.	Irish.	Scotch.	Others.	Totals.	
1869.....	289	73	74	436					436	No record of nationalities.
1870.....	258	101	78	437	214	93	102	28	437	
1871.....	317	132	101	550	339	40	72	99	550	
1872.....	689	396	347	1,432	1,187	88	137	20	1,432	
1873.....	1,037	414	202	1,653	972	22	117	542	1,653	
1874.....	789	321	423	1,525	889	78	167	391	1,525	
1875.....	374	136	233	743	551	44	21	127	743	
1876.....	320	90	106	516	409	18	21	68	516	
1877.....	607	200	124	931	580	99	35	217	931	
1878.....	1,256	429	366	2,051	1,280	329	133	309	2,051	
1879.....	2,503	751	701	3,955	2,516	706	67	666	3,955	
1880.....	1,921	626	548	3,095	1,754	681	165	495	3,095	11 months.
1881.....	2,028	801	817	3,646	2,248	766	223	409	3,646	13 "
1882.....	4,970	2,086	1,667	8,723	5,597	999	514	1,613	8,723	
1883.....	4,589	2,029	1,857	8,475	5,435	1,178	237	1,625	8,475	
1884.....	3,033	1,193	1,378	5,604	4,097	637	190	680	5,604	
1885.....	2,440	958	1,029	4,427	2,906	539	262	720	4,427	
1886.....	3,305	1,302	1,049	5,656	4,336	488	511	321	5,656	This statement does not include cabin passengers.
1887.....	6,305	2,532	1,837	10,674	7,261	839	694	1,880	10,674	
1888.....	9,030	3,410	2,613	15,053	9,785	750	1,327	3,191	15,053	
1889.....	7,430	3,054	1,844	12,328	6,303	370	1,027	4,628	12,328	
1890.....	5,817	2,180	1,440	9,437	5,952	259	588	2,638	9,437	
1891.....	5,996	2,555	1,567	10,118	6,203	181	602	3,132	10,118	
1892.....	7,256	2,635	1,958	11,849	6,357	190	431	4,871	11,849	
1893.....	10,611	3,929	3,592	18,132	6,160	224	371	11,377	18,132	
1894.....	3,854	1,571	1,721	7,146	4,159	142	275	2,570	7,146	
1895.....	3,373	1,258	904	5,535	4,048	179	347	961	5,535	10 months.
1896.....	4,499	1,930	1,380	7,809	4,998	153	346	2,312	7,809	14 "
1897.....	3,298	1,606	1,661	6,565	3,516	101	226	2,722	6,565	
1898.....	4,584	2,330	2,789	9,703	3,555	132	310	5,706	9,703	

J. A. KIRK,  
*Dominion Government Immigration Agent.*

HALIFAX, N.S., 31st December, 1898.

Department of the Interior.

STATEMENT H.—Showing Sexes, Nationalities and Destinations of Steerage Passengers via different Lines.

Lines.	SEXES.				NATIONALITIES.								DESTINATIONS.													
	Adults.		Children.		Totals.	English.	Irish.	Scotch.	Germans.	Scandinavians.	French & Belgians.	U. S. Citizens.	Canadians.	Other Countries.	Totals.	Maritime Provinces.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Yukon.	Tourists.	Returned Canadians.	United States.	Totals.
	Male.	Female.	Male.	Female.																						
Allan.....	1,387	378	201	163	2,129	1,047	75	202	103	369	22	4	48	259	2,129	356	113	224	476	131	216	12	3	51	547	2,129
Dominion.....	774	146	162	42	1,124	760	23	38	58	78	26	2	24	115	1,124	51	106	225	343	86	131	7	..	28	147	1,124
Beaver.....	589	184	80	84	937	425	34	68	74	64	14	4	23	231	937	34	64	96	273	51	137	28	11	29	214	937
Hamburg-American.....	1,177	1,040	943	973	4,133	.....	.....	.....	27	.....	.....	.....	1	4,105	4,133	2	4	1	3,685	436	2	.....	.....	1	2	4,133
Others.....	657	582	65	76	1,380	1,323	.....	2	5	1	23	16	10	.....	1,380	691	11	7	1	15	.....	.....	.....	10	644	1,380
Totals.....	4,584	2,330	1,451	1,338	9,703	3,555	132	310	267	512	85	26	106	4,710	9,703	1,134	298	553	4,778	705	501	47	14	119	1,554	9,703

J. A. KIRK,  
Dominion Government Immigration Agent.

HALIFAX, N.S., 31st December, 1898.

## STATEMENT I.—Showing Juvenile Immigration and Societies connected.

Steamers.	Date.	By whom sent.	SEXES.				Destinations.
			Over 18.		Under 18.		
			M.	F.	M.	F.	
Vancouver.....	Feb. 6..	Bristol Em. Society.....			1		1 St. John, N.B.
California.....	Mar. 19..	Southwark Cath. Em. Soc. ....			7		7 Portage La Prairie.
Scotsman.....	" 26..	Dr. Stephenson.....			19		19 Hamilton.
Labrador.....	April 9..	Dr. Barnardo.....	19		141		160 Toronto and Russell.
".....	" 9..	Mr. Wallace.....	3		17		20 Belleville.
Siberian.....	May 28..	Mr. Middlemore.....			76	44	120 Maritime Provinces.
		Totals.....	22		261	44	327

J. A. KIRK.  
*Dominion Government Immigration Agent.*

HALIFAX, N.S., 31st December, 1898.

# Department of the Interior.

## No. 3.

### REPORT OF QUEBEC AGENT.

(P. DOYLE.)

DOMINION GOVERNMENT IMMIGRATION OFFICE,  
QUEBEC, 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you herewith my annual report for the calendar year ending 31st December, 1898, with tables giving the number of cabin and steerage passengers arrived; the nationalities, trades and callings, and the general destinations of the steerage passengers.

The arrivals up to 31st December, compared with those of the same period in 1897, were as follows:—

	1897.		1898.		Increase	Decre'se
	Cabin.	Steerage	Cabin.	Steerage		
England.....	4,188	11,853	4,432	14,998	3,389	.....
Ireland.....	89	414	80	322	.....	101
Scotland.....	54	701	30	980	255	.....
Germany.....	2	3,117	.....	.....	.....	3,119
Belgium.....	2	75	.....	.....	.....	77
	4,335	16,160	4,542	16,300	3,644	3,297
	.....	4,335	.....	4,542	3,297	.....
Grand total.....	.....	20,495	.....	20,842	347	.....

showing an increase of 347.

The total number of steamships arrived with passengers was 103; tonnage, 305,225.

The average passage of the Allan Line was: Weekly steamers from Liverpool, 9 days; Londonderry, 8 days. Glasgow steamers from Glasgow, 11 days. Dominion Line, weekly steamers from Liverpool, 9½ days. Beaver Line, weekly steamers from Liverpool, 11 days, Londonderry, 9½ days.

The number of Cabin and Steerage by each line was as follows :—

	Cabin.	Steerage.	Total.
ALLAN LINE.			
Weekly steamers from Liverpool.....	1,574	4,855	6,429
" " Londonderry .....	74	311	385
" " Glasgow.....	30	980	1,010
	1,678	6,146	7,824
DOMINION LINE.			
Weekly steamers from Liverpool.....	2,041	4,891	6,932
BEAVER LINE.			
Weekly steamers from Liverpool.....	817	5,252	6,069
" " Londonderry .....	6	11	17
	823	5,263	6,086
Grand total.....	4,542	16,300	20,842

## Department of the Interior.

The Nationalities of the Passengers brought out by each Line were as follows:—

	SCANDINAVIAN.			Germans.	RUSSIANS.				GALICIAN.			Icelanders.	Hungarians.	Italians.	Roumanians.	Armenians.	Hollanders.	Swiss.	Turks.	Silesians.	Spaniards.	Burmeses.	Australians.	Greeks.	Bohemians.	New Zealanders.	Arabs.	Bavarians.	Japanese.	Total.		
	Swedes.	Norwegians.	Danes.		Russians.	Jews.	Poles.	Fins.	Austrians.	Galicians.																						
<i>Allan Line.</i>																																
Weekly, Liverpool...	3,488	71	137	198	120	461	611	136	63	425	145	146	33	54	270	15	2	20	15	1	5	6	2	4						1	6,429	
" " Londonery	39		319	3						23	1																				385	
" " Glasgow	44		3	743	1					110				2											3					1,010		
<i>Dominion Line.</i>																																
Weekly, Liverpool...	3,571	71	459	944	121	461	611	136	63	558	146	146	33	56	270	15								4						1	7,824	
<i>Beaver Line.</i>																																
Weekly, Liverpool...	1,313	21	185	149	403	119	94	42	89	231	134	24	2,490	107	83	243	71														1	6,069
" " Londonery			11	1						5																					17	
Totals	9,586	97	709	1,199	729	996	922	251	297	1,216	393	276	2,597	208	502	311	82														1	120,842



The following tables give the number of male and female adults, and the sexes of children and infants of each nationality arrived in 1898.

	ADULTS.		CHILDREN.		Infants.	Total.
	Male.	Female.	Male.	Female.		
English.....	4,925	3,021	788	684	167	9,585
Welsh.....	61	17	6	9	4	97
Irish.....	375	241	39	40	14	709
Scotch.....	541	448	98	88	24	1,199
Germans.....	323	197	89	98	22	729
Swedes.....	485	363	70	66	12	996
Norwegians.....	468	304	71	69	10	922
Danes.....	128	79	20	20	4	251
French and Belgians.....	201	80	6	7	3	297
Canadians.....	637	433	56	66	24	1,216
Americans.....	236	102	24	21	10	393
Russians.....	107	63	45	42	19	276
do Jews.....	1,410	540	300	263	84	2,597
do Poles.....	123	41	13	18	13	208
do Finns.....	263	153	34	41	11	502
Austrians.....	205	59	20	17	10	311
do Galicians.....	34	21	14	8	5	82
Icelanders.....	36	38	14	13	5	106
Hungarians.....	49	21	10	16	1	97
Italians.....	48	11	5	6	2	72
Roumanians.....	34	16	6	6	1	63
Armenians.....	29	6	3	2	.....	40
Hollanders.....	13	3	1	3	.....	20
Swiss.....	11	2	.....	.....	1	14
Turks.....	8	2	1	1	.....	12
Silesians.....	2	3	4	2	.....	11
Spaniards.....	8	.....	.....	.....	.....	8
Burmese.....	3	5	.....	.....	.....	8
Australians.....	6	.....	.....	.....	.....	6
Greeks.....	5	.....	.....	.....	.....	5
Bohemians.....	3	.....	.....	.....	.....	3
New Zealanders.....	3	.....	.....	.....	.....	3
Arabs.....	.....	2	.....	.....	.....	2
Bavarians.....	1	.....	.....	.....	.....	1
Japanese.....	1	.....	.....	.....	.....	1
Totals.....	10,782	6,271	1,737	1,606	446	20,842

The trades and callings of the male steerage passengers, as per passenger lists, were as follows :—

Farmers.....	872
Farm labourers and labourers.....	5856
Mechanics.....	1308
Clerks, traders, &c.....	301
Gold miners.....	27

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## Department of the Interior.

**TABLE showing the number of Immigrants landed at Quebec, assisted to emigrate by various societies, during the year 1898.**

By whom sent.	Adults.		Children		Infants.		Total.	Destinations.
	Male.	Female.	Male.	Female.	Male.	Female.		
Dr. Barnado, London.....			195	241			436	Peterboro', Tor- onto & Manit.
United British Woman's Emigration Association, London. Honorable Mrs. Joyce.....	6	99	2	19	1	3	130	General.
Southwark Catholic Emigration Committee, London. Father St. John.....			79	41			120	Mont. & Ottawa.
Liverpool Catholic Children's Protective Society.....			40	25			65	Montreal.
Church of England Waifs and Strays Association, London.....			19	22			41	Sherbr'k & Niag.
Mr. Fegan's Homes, London.....			37				37	Toronto.
Home of Industry, 29 Bethnal Green Road, London.....			26	8			34	Stratford, Ont.
Sheltering Homes, Myrtle St., Liverpool. Mrs. Birt.....			12	17			29	Knowlton, P.Q.
Canadian Catholic Emigration Committee, London.....			28				28	Montreal.
Manchester and Salford Boys and Girls, Strangeway, Manchester.....			3	24			27	Belleville.
Self Help Emigration Society, London.....			16				16	Montreal & Man.
Homes of Refuge and Reformatory Industrial Schools, Glasgow.....		15					15	St. John, N.B.
Children's Aid Society, 32 Charing Cross, London.....			15				15	Winnipeg.
Bristol Emigration Society.....			7	1			8	St. John, N.B.
Children's Home and Orphanage, Banner Road, London. Revd Dr. Stephenson.....			6				6	Hamilton.
Working Boys Home, 9 Great George Square, Liverpool.....			4				4	Lennoxville, Q.
Kingham Hill School, Chipping Norton, Oxfordshire.....			3				3	Woodstock, Ont.
Wellington Reformatory School, Midlothian.....			3				3	St. John, N.B.
Central School, Scarboro, Yorkshire.....			3				3	Stratford, Ont.
Working Boys Home, Chester.....			2				2	Sweetsburg, Q.
Tower Hamlet Mission Emigration Society, London.....			1				1	Winnipeg.
Church Emigration Society, 34 Newark St., London.....			1				1	Montreal.
Philanthropic Society, Redhill, Surrey.....			1				1	Winnipeg.
St. Saviour's Home, Taunton, Somerset.....			1				1	Moosomin, NWT
	6	114	504	398	1	3	1026	

**STATEMENT of the number of Immigrants arrived at the Port of Quebec, distinguishing the countries from whence they sailed, up to 31st December, 1897 and 1898.**

	1897.	1898.
England—		
Liverpool.....	16,034	19,430
Bristol.....	7	
Ireland—		
Londonderry.....	500	402
Queenstown.....	3	
Scotland—		
Glasgow.....	755	1,010
Germany—		
Hamburg.....	3,119	
Belgium—		
Antwerp.....	77	
	20,495	20,842

COMPARATIVE STATEMENT of the number of arrivals at the Port of Quebec from the year 1829 to 1898, inclusive, according to Ports of Departure.

Years.	England.	Ireland.	Scotland.	Germany and Scandinavia.	Other Countries.	Total.
1829 to 1833.	43,386	102,266	20,143	15	1,889	167,699
1834 to 1838	28,561	54,904	11,061	485	1,346	96,357
1839 to 1843.	30,791	74,981	16,311	.....	1,777	123,860
1844 to 1848.	60,458	112,192	12,797	9,728	1,219	196,394
1849.....	8,980	23,126	4,984	436	968	38,494
1850.....	9,887	17,976	2,879	849	701	32,292
1851.....	9,677	22,381	7,042	870	1,106	41,076
1852.....	9,276	15,983	5,477	7,256	1,184	39,176
1853.....	9,585	14,417	4,745	7,456	496	36,699
1854.....	18,175	16,165	6,446	11,537	857	53,180
1855.....	6,754	4,106	4,859	4,864	691	21,274
1856.....	10,353	1,688	2,794	7,343	261	22,439
1857.....	15,471	2,016	3,218	11,368	24	32,097
1858.....	6,441	1,153	1,424	3,578	214	12,810
1859.....	4,846	417	793	2,722	.....	8,778
1860.....	6,481	376	979	2,314	.....	10,150
1861.....	7,780	413	1,112	10,618	.....	19,923
1862.....	6,877	4,545	2,979	7,728	47	22,176
1863.....	6,317	4,949	3,959	4,182	12	19,419
1864.....	5,013	3,767	2,914	7,453	.....	19,147
1865.....	9,296	4,682	2,601	4,770	6	21,355
1866.....	7,235	2,230	2,222	16,958	3	28,648
1867.....	9,509	2,997	1,793	16,453	5	30,757
1868.....	16,173	2,585	1,924	13,607	11	34,300
1869.....	27,876	2,743	2,867	9,626	2	43,114
1870.....	27,183	2,534	5,356	9,396	6	44,475
1871.....	23,710	2,893	4,984	5,391	42	37,020
1872.....	21,712	3,274	5,022	4,414	321	34,743
1873.....	25,129	4,236	4,803	2,010	723	36,901
1874.....	17,631	2,503	2,491	857	412	23,894
1875.....	12,456	1,252	1,768	.....	562	16,038
1876.....	7,720	688	2,131	.....	362	10,901
1877.....	5,927	663	829	.....	324	7,743
1878.....	7,500	913	1,425	.....	457	10,295
1879.....	14,113	1,088	1,602	.....	448	17,251
1880.....	18,647	2,485	2,845	.....	1,029	24,997
1881.....	24,426	2,480	2,861	.....	471	30,238
1882.....	33,650	5,992	4,476	.....	732	44,850
1883.....	29,003	10,638	5,460	.....	865	45,966
1884.....	24,035	3,590	3,075	.....	829	31,529
1885.....	13,178	1,632	1,942	.....	278	17,030
1886.....	17,626	2,148	2,766	.....	242	22,782
1887.....	25,100	2,436	4,874	.....	339	32,749
1888.....	22,377	1,631	4,375	.....	147	28,530
1889.....	17,784	1,344	2,906	.....	57	22,091
1890.....	17,675	1,170	2,320	.....	.....	21,165
1891.....	20,327	903	2,177	28	.....	23,435
1892.....	24,500	925	1,762	181	54	27,422
1893.....	33,628	873	1,672	5,340	5,375	46,888
1894.....	16,240	634	626	2,189	1,300	20,989
1895.....	16,371	675	700	1,551	477	19,774
1896.....	15,997	553	793	1,441	383	19,167
1897.....	16,041	503	755	3,119	77	20,495
1898.....	19,430	402	1,010	.....	.....	20,842

## Department of the Interior.

Reviewing the work of the past year, the result has been satisfactory, the emigrants have been a good class, healthy, strong and self-reliant. Many of them were the better class of farmers from the British Isles, possessed of sufficient means to make a successful start in this country.

The past year's immigration from foreign countries is deserving of particular mention; there could not be a finer class of settlers, as they were practical farmers and farm labourers, bringing sufficient means to give them a good start and commence farming in an independent way. Their example will be of great benefit to others of their countrymen likely to emigrate next season.

Taking the advantages of Manitoba and the North-West Territories into consideration, the Dominion can be recommended as a suitable field for foreign immigrants.

Good farmers and farm labourers found ready employment. These and female servants are always in demand and sure of finding employment on arrival.

The whole respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

P. DOYLE,

*Dominion Government Immigration Agent.*

**STERAGE PASSENGERS.**  
**STATEMENT of Immigrant Arrivals and Departures at Quebec Immigration Agency for the Year ending the 31st December, 1898.**

Months.	SEXES.				Total Number of Souls.	DESTINATIONS.										NATIONALITIES.							OCCUPATIONS.							For United States—Not Reported Elsewhere.						
	Adults.		Children			Returned Canadians.	Yukon.	Lower Provinces.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Tourists.	United States.	English.	Welsh.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	United States Citizens.	Canadians.	Other Countries.	Farmers.	Farm Labourers.	Labourers.	Mechanics.		Gold Miners.	Clerks and Traders.	Female Servants.	Not Classified.	For Canada—Not Reported Elsewhere.	
	Male.	Female.	Male.	Female.																																
January.	463	328	86	26	463	8	5	179	50	62	15	38	104	321	10	4	24	19	6	2	8	51	573	190	38	53	171	58	2	6	46	89	359	104		
February.	3233	1937	707	289	3233	42	23	575	476	464	154	227	51	1196	1376	44	201	129	632	39	32	51	573	190	38	53	171	58	2	6	46	89	359	104		
March.	2265	1086	670	283	2265	36	34	359	324	311	152	170	2	857	826	10	89	292	87	365	24	15	36	511	111	128	647	163	37	277	892	1388	867			
April.	2461	1128	671	330	2461	78	1	41	359	428	443	67	116	8	920	981	10	84	145	86	335	38	48	79	655	164	159	598	151	56	221	1112	1541	920		
May.	2446	1297	672	340	2446	46	13	425	361	245	65	80	6	1205	829	21	79	136	95	249	37	44	46	910	137	121	713	236	60	169	1960	1241	1205			
June.	2789	1240	855	390	2789	104	15	506	518	213	92	113	5	1223	1174	6	123	141	154	249	33	88	104	706	110	108	757	208	57	204	1340	1566	1223			
July.	1695	802	563	184	1695	43	5	315	230	116	86	103	2	795	603	3	77	107	87	246	12	24	43	483	82	100	467	133	20	160	733	900	795			
August.	958	546	264	78	958	13	9	108	118	37	27	4	618	271	27	10	34	54	10	13	523	34	34	363	101	14	46	366	340	618						
September.	16300	8364	4488	1780	16300	370	145	2826	2505	1891	638	871	78	6928	6381	94	145	1036	696	2160	199	263	380	4446	872	815	5041	1308	27	301	1391	6545	9372	6928		
October.																																				
November.																																				
December.																																				

P. DOYLE,  
 *Dominion Government Immigration Agent.*

QUEBEC, 31st December, 1898.



STORAGE PASSENGERS DESTINED FOR THE UNITED STATES.

STATEMENT of Arrivals and Departures at Quebec Immigration Agency for the twelve months ending 31st December, 1898.

Months.	SEXES.				Total Number of Souls.	NATIONALITIES.										OCCUPATIONS.					Total.			
	Adults.		Children			Arrived via Ocean Travel.	English.	Welsh.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	United States Citizens.	Canadian.	Other Countries.	Farmers.	Farm Labourers.	Labourers.	Mechanics.		Clerks and Traders.	Female Domestics.	Not Classified.
	Male.	Female.	Male.	Female.																				
January	80	12	8	4	104	6	7	1	4	22	11	1	2	61	6	8	34	36	1	1	23	104		
February	698	300	92	106	1,196	143	143	25	4	82	495	1	27	412	54	23	508	103	10	109	389	1,196		
March	1,196	402	269	105	91	867	66	1	12	14	57	290	2	14	411	18	31	257	90	6	98	367	1,196	
April	920	450	274	102	94	920	66	2	22	9	62	281	11	46	421	44	35	287	70	14	94	376	920	
May	1,205	653	302	126	124	1,205	86	7	11	12	69	180	4	44	792	38	17	408	175	12	58	494	1,205	
June	1,223	612	353	137	121	1,223	168	7	20	9	111	219	3	74	619	31	14	434	117	16	71	540	1,223	
July	795	411	234	81	69	795	94	3	34	11	40	221	4	24	364	30	34	265	77	5	61	323	795	
August	618	382	134	53	49	618	42	7	7	3	13	48	4	10	491	17	12	276	75	2	18	218	618	
September	6,928	3,688	1,878	704	658	6,928	671	20	132	62	456	1,745	30	241	3,571	238	169	2,469	746	66	510	2,730	6,928	
October																								
November																								
December																								

P. DOYLE,

*Dominion Government Immigration Agent.*

QUEBEC, 31st December, 1898.





CABIN PASSENGERS FOR THE UNITED STATES.

STATEMENT of Arrivals and Departures at Quebec Immigration Agency for the twelve months ending 31st December, 1898.

Months.	SEXES.				Total number of Souls.	NATIONALITIES.										OCCUPATIONS.						Total.	
	Adults.		Children			English.	Welsh.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	United States Citizens.	Canadians.	Other Countries.	Farmers.	Farm Labourers.	Labourers.	Mechanics.	Clerks.	Female servants.		Not Classified.
	Male.	Female.	Male.	Female.																			
Arrived via Ocean Travel.	269	170	83	8	8	209	114	5	1	12	5	5	127	5	1	2	2	1	1	1	1	266	
January	31	14	11	4	2	31	14						15				1					30	
February	26	19	6	1	1	26	15		1				8									26	
March	55	35	16	1	3	55	30		3	2			17				1		1			53	
April	48	29	17	1	1	48	13		2				29									48	
May	72	46	23	1	2	72	18		4	2			46									72	
June	25	19	6			25	12		6	2			13									25	
July	12	8	4			12	12															12	
August	269	170	83	8	8	209	114	5	1	12	5	5	127	5	1	2	2	1	1	1	1	266	
September																							
October																							
November																							
December																							

P. DOYLE,  
Dominion Government Immigration Agent.

QUEBEC, 31st December, 1898.

# Department of the Interior.

No. 4.

## REPORT OF MONTREAL AGENT.

(JOHN HOOLAHAN.)

DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit, for your information, the annual report of the work of this agency for the year ending the 31st December, 1898, together with the accompanying statements in connection with immigration.

### STATEMENT A.

Shows the number of immigrant arrivals per Ocean travel via the United States ports of New York, Boston and Portland at Montreal, their destinations, nationalities and occupations.

### STATEMENT B.

Shows the number of immigrant arrivals at Montreal from the United States, their destinations, nationalities and occupations.

### STATEMENT C.

Shows the number of juvenile immigrant arrivals and their destinations.

### STATEMENT D.

Shows the number of applications for help, received at this agency.

### STATEMENT E.

Gives the retail prices of food, fuel, &c., for the working classes in Montreal.

### STATEMENT F.

Gives the retail prices of clothing, &c., for the working classes in Montreal.

### STATEMENT G.

Gives the average rate of wages for mechanics, labourers and domestic servants.

### IMMIGRATION STATISTICS.

The record at this agency of the number of immigrant arrivals at Montreal from the United States, will be found in the Statements A and B with full particulars.

Those steerage passengers who arrive from Europe at the ports of Quebec, Halifax, N.S., or St. John, N.B., and who are compelled to disembark there, are accounted for at those ports, being transferred to the different railways there.

The first and second-class passengers, as a general rule, during the season of St. Lawrence River navigation, remain on board until the steamship reaches Montreal, and disembark here.

The total number of immigrants arriving at Montreal, per ocean travel via ports of New York, Boston and Portland, as per Statement A during the year 1898, was.....	1,789
Total number of immigrants arrived at Montreal from United States, as per Statement B during the year 1898.....	1,848
	3,637
Total number of immigrants arrived at Montreal from United States, and per ocean travel via ports in United States, during the year 1897.....	2,840
An increase of.....	1,203
in 1898, as compared with the year 1897.	

#### THE LABOUR MARKET.

There was a fair demand during the past season for general labourers, particularly on the river front during the shipping, for railway construction work and for building purposes.

In the matter of mechanics, I would strongly advise that intending emigrants of this class should first make inquiries as to what outlook there is for their obtaining work. I may say that my experience of the past year shows me that the local supply of such labour is fully equal to the demand. It is a fact that large numbers of workmen come to Montreal every season only to find there is no opening for them.

The local supply of common labourers during the season was somewhat contracted on account of the numerous public works going on in Canada. The Royal Victoria Jubilee Bridge projected by the Grand Trunk Railway Company, and the Crow's Nest Pass Railway, by the Canadian Pacific, not to speak of the rush to the Klondike, made labourers rather scarce. The bountiful harvest in the North-West and the necessity to see it properly garnered compelled the railways to make a ten dollar rate from this city to the North-West in order to secure harvest labourers.

#### CLERKS, BOOKKEEPERS, &C.

I would strongly advise people of this class, desiring to emigrate to Canada, to be very careful before severing connection with the old land, unless they come to fill positions already secured for them, or to join friends willing and able to help them in finding employment. This advice applies to all persons whose training and habits unfit them for manual labour.

#### FARM LABOURERS.

Every year there is a growing demand for farm labourers in the district of Montreal, and during the past season the demand has been even greater than in previous years. Good hands can secure regular and remunerative employment during the open season. Many immigrants of this class, who started out as farm-labourers, have now farms of their own. This result does not follow in every case, but depends on the individual himself. Any young man, possessed of energy, strength and thrift, which are the elements to secure success in every country, can attain this result and become his own master in a few years in Canada.

#### DOMESTIC SERVANTS.

There is always a good market for female domestics in Canada and more especially in the Montreal district. Young women of good character, no matter at what season

## Department of the Interior.

they arrive, can always be certain of obtaining employment. It would, however, be well for all intending emigrants of this class, to bring with them references as to character. There is little or no demand for any females outside of domestic servants. Others, such as governesses, milliners or dressmakers, ought to be careful about emigrating, unless they come to join friends or have had employment found for them beforehand in this country.

### GARDENERS AND FLORISTS.

There is a special season for people of this calling, and, provided they arrive at the proper season of the year (in the spring) and are honest, sober and know their business they can find employment at good wages.

### A SATISFACTORY CLASS OF IMMIGRANTS.

I am happy to state that the immigrants who have been temporarily in my charge at the port of Montreal during the past year were of a superior class. They appeared self-reliant, healthy and eager to work, and, with a very few exceptions, came to Canada with a sufficient amount of capital to enable them to settle themselves comfortably in the land of their adoption.

Manitoba, the North-West Territories and British Columbia received the larger portion of these immigrants. The agricultural class predominated.

To bear out my own observations on this subject, I have interviewed the prominent officials of the different national and benevolent societies of Montreal, and I append their views in this connection.

Mr. Joseph Richards, chairman of the charitable committee of the St. George's Society, said:—

“The total number of English and Welsh immigrants admitted into the St. George's Society's Home during the year just closing was about 1,200, being a decrease compared with the preceding year. The Society's expenditure on immigration account has been about \$1,200, a slight excess over the year previous. The immigrants were of a very desirable class for Canada, being mostly farming people, the majority going to the North-West. It is no doubt owing to the excellent scrutiny by the emigration agents on the other side that Canada has been able to secure such a desirable class. The enlightened work of the Canadian emigration agents in England must not be forgotten as they seem to have carefully eliminated undesirable persons and prevented them coming to Canada. Of those who remained in this province, a large number went to work on farms in the Eastern Townships.”

Mr. B. Campbell, chairman of the charitable committee of the St. Patrick's Society, stated:—

“There was a comparatively small amount spent on immigration account this year. It consisted of the payment of railway fares for those going to work on farms in the West or in the surrounding districts. We helped to secure situations for those who called upon us. It seems to me that we have been getting a better and more suitable class of persons during the past few years than was the case formerly. Those who came to us this year were self-reliant, intelligent and well able to look after their own interests. They had with them sufficient funds to keep themselves and families until they could secure work, asking no help from us. The Canadian emigration agents in the United Kingdom have done admirable work in their selection of the proper people to send out to the Dominion.”

Mr. James Wright, chairman of the charitable committee of the St. Andrew's Society, said:—

“There was a decrease in the total number of immigrants admitted into the St. Andrew's Society's Home this year, and a corresponding decrease in expenses under this head. The new arrivals were intelligent and knew how to take care of themselves. They remained in the 'Home' for a day or two for rest and recuperation prior to resuming the journey to their destinations in the Western Country.”

Mr. M. D. McMillan, Superintendent of the Protestant House of Industry and Refuge, in answer to questions put to him replied as follows :—

“ There were very few applications for admissions from immigrants during the year, and the amount expended under this head was a very small sum indeed. This was a thorough testimony to the fact that pauper immigration was a thing of the past, and that the Dominion Immigration Department was doing its duty.”

Mr. William Seal, chairman of the immigration committee of the Irish Protestant Benevolent Society, said :—

“ There was no money spent on immigration account this year. I have reason to believe that a number arrived here this year, but they came well provided with funds and all my committee had to do was to secure some of them situations and give others advice.

“ From this I should judge that we should be well pleased with the immigrants of 1898.”

#### UNION NATIONALE FRANÇAISE DE MONTRÉAL.

##### *Société de bienfaisance.*

The object of the above society, with headquarters at No. 42 Cadieux street, Montreal, is to assist all new arrivals from France, provide them with situations and give them all help possible to make new homes for themselves.

Mr. E. Boudet, one of the members of the charitable committee of the society, told me that the majority of the new arrivals were of the farming class, and these readily obtained situations. The expenditure on account of immigration in the past year would probably amount to a sum similar to that of the preceding year. He did not approve of any of his compatriots, other than farmers, farm labourers and female domestics emigrating to Canada, and he adds, that clerks, bookkeepers and mechanics should stay away, as there is no demand for them and a discouraging outlook for them as the home supply can fill all this kind of demand.

Mr. Charles Holmes, travelling immigration agent and interpreter for the Allan Line Steamship Company, in answer to questions said :—

“ The immigrants brought out to Canada by the Allan Line, with whom I came in contact whilst in the discharge of my duty, especially those whose destinations were for some part in Canada, were, in my opinion, an intelligent, healthy and self-reliant people, and would become suitable settlers.”

The large majority, being of the farming class, went forward to Ontario and the North-West.

#### REPATRIATION.

A large number of French Canadians have returned from the United States with the intention of becoming permanent settlers in their old homes in the Province of Quebec. Many of them returned on account of business depression, the bad state of affairs in some of the factory towns, closing down of many of the factories and the war then prevailing between Spain and the United States.

The repatriation movement has now set in pretty strongly, and it is expected that next year a very large number of French Canadians will come back and settle in their native land.

#### HEALTHY IMMIGRANTS.

I am happy to state that the health of the immigrants arriving at this port during the year closing has been exceptionally good, and there has been no serious outbreak of disease among them.

I have, however, to report a few cases of sickness, the particulars of which are as follows :

##### *Ex. S. S. “ Labrador.”*

8th May, 1898.—Two immigrants, being sick, were sent to the General Hospital and were subsequently discharged cured.

## Department of the Interior.

### *Ex. S. S. "Yorkshire."*

13th August, 1898.—Mrs. Hermann and her baby, steerage passengers, being sick, both were sent to the maternity hospital. The baby was born at sea on board the steamer. Both the mother and her child were in due course discharged from the hospital, being convalescent.

### *Ex. S. S. "Tongariro."*

26th October, 1898.—A steerage passenger, Mr. B. Dukett, was taken from the ship to the general hospital, having sustained a fracture of the kneecap, from a fall on board. He is a Russian and was discharged in due course.

### RETURNED IMMIGRANTS.

The following is a list of immigrants returned to England and Germany, owing to sickness and physical debility:—

January 24th, 1898.—Ivan Sucharoneski, a Galician immigrant, returned from Winnipeg via Montreal and St. John, N.B., sailing from the latter port per one of the Beaver Line Steamers for Liverpool, England.

January 28th, 1898.—George Rusuak, a Galician immigrant, returned from Winnipeg via Montreal and New York, sailing from New York per one of the Hamburg American Packet Co.'s steamers to Hamburg, Germany.

September 1st, 1898.—Edward Rawlinson, an English immigrant, returned from Winnipeg on account of being an incurable epileptic, left Montreal per the Allan Line Steamer Numidian for Liverpool, England.

November 25th 1898.—Yurko Kinaschuk, a Galician immigrant, returned from Winnipeg via Montreal and New York, sailing from the latter port per one of the Hamburg American Packet Co's Steamers to Hamburg, Germany.

### THE HOSPITALS.

The Medical Staff of the Montreal General Hospital, the Royal Victoria Hospital and the Notre Dame Hospital have expressed their readiness and willingness to receive and admit for medical treatment such sick and injured immigrants as may be brought to those institutions.

### THE GALICIAN IMMIGRANTS.

There has been a steady stream of Galicians passing through this port during the year, en route for the settlements of their countrymen in Manitoba and the North-West. The total number was about 4,700 and they seemed to be a very desirable class. They all had money and appeared well to do, orderly and industrious. They are evidently good farmers, the great majority having been bred up to farming in their own country.

### THE WOMEN'S NATIONAL IMMIGRATION SOCIETY OF MONTREAL.

The seventeenth annual report of the Women's National Immigration Society of Montreal, is annexed hereto. It is a description of the work accomplished during the year 1898.

The Society's Home is situated at No. 87 Osborne Street, Montreal, and is admirably adapted for the purposes intended, having accommodation for 50 boarders, exclusive of the apartments for the staff, etc.

It is situated in close proximity to the principal railway stations of the Canada Pacific, Grand Trunk and Dominion Government Railway systems.

Mrs. Cox, the president, and her colleagues on the board of management, devote a large portion of their time to the work of the society, with the desire to maintain its efficiency and extend its usefulness.

The staff at the Home, namely, Mrs. Eva Vosburg, the secretary, and Mrs. Mahoney, the matron, are most conscientious, trustworthy and capable officials.

#### JUVENILE IMMIGRANTS.

In dealing with this subject, I wish to remark that there seems to be, in certain minds, an unfounded prejudice against these poor children. This is due simply to the fact that the offences of the few who happen to go wrong are eagerly seized upon by newspapers and published broadcast, while nothing is said of the good deeds of the small army of sturdy little workers who are fighting the battle of life in a strange land.

Mr. A. Regimbal, of this agency, has made special visits to thirty-five children, and found all, with two exceptions, satisfied with their surroundings, and the people who had taken them, satisfied with the children.

#### THE "ANDREWS HOME."

Appended hereto is a summary of the annual report of the "Andrews Home and Church of England Immigration Bureau" situated at No. 46 Belmont Park, Montreal, which bears evidence of good work done by that institution.

The management is spoken of in the warmest terms by immigrants who have availed themselves of the privileges of the Home. No pains have been spared by Rev. G. Frederick Renaud, the immigration chaplain, and the staff of officers under his charge to make things pleasant and agreeable for all who find their way to the "Andrews Home."

#### IMMIGRANT WAITING ROOMS AT THE WINDSOR STATION.

The Canadian Pacific Railway Company have repaired and renovated their two immigrant waiting rooms in the basement of the Windsor Street station. This will add materially to the comfort of that class of travellers over their line. There are two separate rooms, one for men and one for women and children, and both are fitted up with every convenience possible, and heated with hot water coils. There are stationary bedsteads, lavatories and other suitable conveniences.

The two rooms together will afford accommodation for about 500 persons. They have been set apart for immigrants who may be obliged to stop over at Montreal for a short time before resuming their journey westward.

#### TRANSPORTATION.

I have received no complaints, but on the contrary, all of the immigrants I have met have expressed themselves as well satisfied with the treatment accorded them both by the Ocean and Railway Transportation Companies.

The accommodations provided for steerage-passengers on board the steamships include bedding, eating and drinking utensils and an abundant supply of wholesome and well cooked food.

For the railway journey inland, the Grand Trunk Railway, the Canadian Pacific Railway and the Government Railway systems, all provide well heated and equipped cars to carry the immigrants to their destinations.

#### IMMIGRATION LITERATURE.

In accordance with the Departmental instructions we distributed a large amount of immigration literature amongst the German and Scandinavian emigrants who, during last fall passed through Montreal from the United States to their native land. It appears that a considerable number of these people pay an annual visit to their homes in the old

## Department of the Interior.

country, leaving this side of the Atlantic late in the fall and, after having spent the winter in their old homes, return to the United States next spring to resume their former occupations.

It is thought that a perusal of the pamphlets in question, which are printed in the German and Scandinavian languages, and contain useful and valuable information for emigrants relative to our Canadian North-West as a home for settlers, etc., may have the effect of inducing many of those people to come back, take up their abode with us and become citizens of the Dominion.

### CORRESPONDENCE.

I have received numerous letters of inquiry from prospective emigrants in the United Kingdom, Europe and the United States regarding the Government free grant lands in Ontario, Manitoba and the North-West Territories, the price of farm properties in the different provinces of the Dominion, the cost of transportation by steamships and railways and the rate of wages for mechanics and labourers. Letters of reply, giving the necessary information, have been duly mailed to my correspondents, together with the Government pamphlets, etc.

I have received and answered during the year 1898, about 500 letters.

### APPENDED REPORTS.

I append hereto for your information, the following reports:—

Mr. Edward Schultze, Austro-Hungarian Consul, Montreal.

Rev. J. Frederick Renaud, Secretary of the Andrews Home, 46 Belmont Park, Montreal.

Mr. E. Marquette, Province of Quebec Immigration Agent, Montreal.

Mr. Alfred B. Owen, Canadian Agent of Dr. Barnardo, Toronto, Ont.

Mrs. Eva Vosburg, Hon. Secretary-Treasurer of the Women's National Immigration Society, Montreal.

Mrs. Louisa Birt, Agent, Distributing Home, Knowlton, Que.

Rev. Robert Wallace, Agent, Marchmont Home, Belleville, Ont.

Miss Agnes Breunan, Canadian Agent for the Catholic Children's Protective Society of Liverpool, England, St. Vincent Rescue Home, No. 11 St. Thomas street, Montreal.

Miss A. F. Proctor and Miss H. Urquhart, joint agents of the Southwark (England) Catholic Emigration Society, 149 Berri Street, Montreal.

Mr. I. G. Westling, Corresponding Secretary, Scandinavian National Society of Montreal, 180 St. James Street, Montreal.

Mr. A. Robert, local agent of the Canadian Catholic Emigration Committee of Westminster, England.

Baron de Hirsch Institute.

### CONCLUSION.

Before closing this report I desire to tender my hearty thanks to the officials of the Department at headquarters for the many acts of courtesy and assistance extended to me, to my confreres, the Dominion Immigration agents in the Dominion, the staffs of the different railway and steamship companies, the clergy of all denominations, the provincial immigration agent and the officials of the various national and charitable organizations for the assistance they have rendered me and the staff of my agency in our work and for the ever ready courtesy they have displayed; also to the city press, both English and French, for the valuable support it has invariably extended.

The whole respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

JOHN HOOLAHAN,  
*Dominion Government Immigration Agent.*



STATEMENT A.—Immigrant Arrivals and Departures at the Montreal Agency by Ocean Travel via United States, for the year ended 31st December, 1898.

FOR CANADA.

Months.	SEXES.				Total Number of Souls.	DECLARED DESTINATIONS.										NATIONALITIES.								OCCUPATION.									
	Adults.		Childr'n.			N.S., N.B. and P.E.I.	Returned Canadians.	Yukon.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Toronto.	Total.	English.	Irish.	Scotch.	Germans.	Scandinavians.	French and Belgians.	Canadians.	Other Countries.	Total.	Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Gold Miners.	Clerks, Traders, &c.	Female Servants.	Not Classified.	Total.
	Male.	Female.	Male.	Female.																													
January.....	171	43	17	24	255	3	14	67	52	59	24	36	..	255	157	10	15	7	12	19	14	21	255	26	20	53	19	..	53	8	76	255	
February.....	116	31	14	17	178	4	..	30	27	41	22	51	3	178	85	9	7	14	32	4	18	178	20	24	44	12	..	16	4	58	178		
March.....	146	39	18	21	224	13	..	34	30	58	33	51	5	224	87	8	20	18	10	42	13	26	224	34	42	28	15	..	27	11	67	224	
April.....	78	35	31	36	180	3	..	57	11	78	24	7	..	180	55	1	6	4	60	54	60	54	180	41	24	6	2	3	2	5	97	180	
May.....	87	48	38	61	234	..	..	17	2	211	2	2	..	234	5	7	..	..	11	211	234	49	16	17	5	..	..	..	13	134	234		
June.....	22	10	1	4	37	..	..	30	5	4	..	..	..	37	2	9	..	..	5	21	5	21	37	3	10	16	3	..	..	4	11	37	
July.....	51	17	18	19	105	..	..	20	17	62	9	..	..	105	..	..	..	..	25	80	80	105	23	10	17	..	..	..	1	6	48	105	
August.....	36	22	17	23	98	..	..	7	82	7	2	2	..	98	1	2	..	..	7	88	88	98	19	11	4	..	..	..	2	5	57	98	
September.....	27	19	9	7	62	..	..	6	4	40	9	2	..	62	3	2	..	..	16	37	37	62	19	5	2	..	..	..	1	9	26	62	
October.....	22	21	20	10	73	..	..	6	10	51	5	1	..	73	3	9	..	..	32	18	32	73	12	9	..	..	..	..	6	45	73		
November.....	104	56	37	23	220	..	..	40	18	134	12	16	..	220	7	3	24	..	188	168	220	40	27	30	6	..	..	..	1	15	101	220	
December.....	53	38	20	12	123	..	..	25	5	75	5	13	..	123	6	3	1	..	101	101	123	20	13	16	2	..	..	..	2	15	55	123	
Total.....	913	379	240	257	1,789	3	31	340	176	895	152	181	8	1,789	400	31	52	99	44	279	31	853	1,789	306	201	253	65	3	105	101	775	1,789	

DOMINION GOVERNMENT IMMIGRATION AGENCY,  
 MONTREAL, 31st December, 1898.

JOHN HOOLAHAN,  
 Dominion Government Immigration Agent.

Department of the Interior.

STATEMENT B.—Immigrant Arrivals and Departures at the Montreal Agency from United States, for the year ended December 31st, 1898.

FOR CANADA.

Months.	SEXES.				Total Number of Souls.	DECLARED DESTINATIONS.										NATIONALITIES.						OCCUPATION.									
	Adults.		Childr'n.			Returned Canadians.	Yukon.	Quebec.	Ontario.	Manitoba.	North-West Territories.	British Columbia.	Total.	English.	Irish.	Scottish.	Germans.	Scandinavians.	French and Belgians.	Canadians.	Other Countries.	Total.	Farmers.	Farm Labourers.	General Labourers.	Mechanics.	Gold Miners.	Clerks, Traders, &c.	Female Servants.	Not Classified.	Total.
	Male.	Female.	Male.	Female.																											
January	52	23	16	20	111		15	21	2	5	10	47	11	111	20	9	4	4	46	8	15	5	111	19	5	6	1	21	3	56	111
February	228	100	81	72	481	340	65	8	5	2	53	2	481	58	11	15	1	1	1	340	55	340	34	17	99	13	65	1	253	481	
March	261	25	28	20	334	74	196	7	9	4	240	4	334	7	4	13	1	1	74	236	334	8	1	250	1	1	1	1	73	334	
April	54	55	28	40	177	186	12	5	6	16	2	177	10	3	4	3	13	8	136	8	177	31	4	17	1	1	1	1	5	118	177
May	191	26	19	21	257	81	4	1	1	21	149	257	34	257	34	6	7	4	2	61	60	183	18	9	77	1	1	1	65	257	
June	105	27	27	24	183	61	16	12	18	56	20	183	36	6	7	7	4	2	56	7	123	40	4	6	3	1	1	1	67	183	
July	53	31	22	17	123	56	9	17	9	25	7	123	16	8	2	9	25	7	73	12	107	14	7	11	6	1	1	1	69	123	
August	38	34	15	20	107	73	22	12	1	1	1	107	10	7	5	1	1	1	45	12	107	13	4	14	5	1	1	1	38	107	
September	36	19	9	11	75	45	15	14	1	1	1	75	7	8	2	1	1	1	45	12	75	13	4	14	5	1	1	1	38	75	
October	38	34	15	20	107	73	22	12	1	1	1	107	10	7	5	1	1	1	45	12	107	13	4	14	5	1	1	1	38	107	
November	36	19	9	11	75	45	15	14	1	1	1	75	7	8	2	1	1	1	45	12	75	13	4	14	5	1	1	1	38	75	
December	36	19	9	11	75	45	15	14	1	1	1	75	7	8	2	1	1	1	45	12	75	13	4	14	5	1	1	1	38	75	
Total	1,018	340	245	245	1,848	881	86	81	58	172	482	1,848	198	56	37	98	11	881	528	1,848	191	56	650	32	86	3	13	817	1,848		

JOHN HOOLAHAN,  
Dominion Government Immigration Agent.

DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

STATEMENT C—Showing the number of Children received at this Agency, whom in charge of, and destination, for the year ended 31st December, 1898.

Date.	Name of Person in Charge.	Number of Children.	Destination.	By whom Sent.
1898.				
March 28.	Miss F. Butt	19	Hamilton, Ont.	Rev. Dr. T. B. Stephenson.
April 7.	Mr. A. Drummond	39	Knowlton	Mrs. L. Birt.
" 10.	Rev. R. Wallace	22	Belleville	Rev. R. Wallace.
" 10.	Mr. A. B. Owen	60	Toronto	Dr. Barnardo.
" 10.	Mr. E. A. Struthers	55	Winnipeg	"
" 10.	Mr. E. A. Struthers	45	Russell	"
May 2.	Miss Proctor	20	Montreal	Rev. Lord A. Douglas.
" 2.	Miss Francis	10	Niagara, Ont.	Ch. of England Waifs and Strays.
" 7.	Mr. J. Merry	38	Stratford	Miss McPherson.
" 8.	Rev. J. Holt	15	Winnipeg	Children's Aid Society, London.
" 18.	Miss Smethers	27	Belleville	Rev. R. Wallace.
" 29.	Miss Yates	42	Montreal	Liverpool C. P. Society.
June 5.	Mr. J. Conner	6	Hamilton	Rev. Dr. T. B. Stephenson.
" 5.	Mr. J. Conner	42	"	Mr. Fagan.
" 11.	Mr. A. Drummond	36	Knowlton	Mrs. L. Birt.
" 20.	Rev. Lord A. Douglas.	38	Ottawa	Rev. Lord A. Douglas.
" 26.	Miss Francis	5	Sherbrooke	Ch. of England Waifs and Strays.
" 26.	Miss Francis	8	Niagara, Ont.	"
July 3.	Mrs. Forster	8	St. John, N.B.	Bristol Emigration Society.
" 23.	Mr. D. White	31	Winnipeg	Dr. Barnardo.
" 23.	Mr. A. B. Owen	120	Peterborough	"
" 23.	Mr. A. B. Owen	69	Toronto	"
August 6.	Miss Francis	3	Sherbrooke	Ch. of England Waifs and Strays.
" 6.	Miss Francis	4	Toronto	" " "
" 6.	Miss Francis	4	Niagara, Ont.	" " "
" 13.	Miss Proctor	19	Montreal	Rev. Lord A. Douglas.
" 13.	Mr. J. V. Lallyd	28	Ottawa	"
" 28.	Miss E. Dante	3	Stratford	Miss McPherson.
Sept. 24.	Mr. D. White	26	Winnipeg	Dr. Barnardo.
" 24.	Mr. D. White	10	Russell	"
" 24.	Mr. A. B. Owen	120	Peterborough	"
" 24.	Mr. A. B. Owen	52	Toronto	"
" 25.	Miss Yates	23	Montreal	Liverpool C. P. Society.
" 26.	Miss R. Jerrard	28	"	Rev. Th. Seddon.
Oct. 31.	Mrs. L. Lloyd	11	"	Rev. Lord A. Douglas.
" 31.	Mrs. L. Lloyd	12	Ottawa	" "
	Total	1,098		

JOHN HOOLAHAN,

*Dominion Government Immigration Agent.*

DOMINION GOVERNMENT IMMIGRATION AGENCY,

MONTREAL, 31st December, 1898.

## Department of the Interior.

STATEMENT D.—Annual report of immigrants wanted at the Montreal Agency for the year ended 31st December, 1898.

Class of Labour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Remarks.
Blacksmiths.....	1				1	2	2	1	2				9	Local supply sufficient.
Butchers.....					2	1		1					4	"
Carpenters.....	2	3	4	7	4	3	6	4	10	4		2	49	"
Clerks.....														No demand.
Express drivers.....					3				1	1				5 Local supply sufficient.
Grooms and coachmen.....	1	2	3	5	5	2			2	3	2			25 Fair demand.
Females—General servants.....	12	10	12	17	20	18	12	13	15	11	8	10	158	Large demand.
"    Cooks.....	9	7	8	10	15	14	4	5	6	4	3	6	91	"
"    Housemaids.....	3	3	4	6	9	7	7	6	7	5	2	4	65	"
Farm-hands.....	5	6	8	18	16	14	14	11	14	7	3	5	121	Good demand in season.
Night watchmen.....														Local supply sufficient.
General labourers.....	2	15	21	42	45	20	60	40	25	12	5	3	290	"
Storemen.....														"
Tinsmiths.....					3								3	"
Waiters.....				1	2				1	1			5	"
Boys—Messengers.....							1			1			2	"
"    Office.....														"
"    Bell.....			1	3	4	3	1	2	1	2		1	18	"
"    Care of horses.....	2		3	5	7	9	5	4	6	3		2	46	Fair demand.

JOHN HOOLAHAN,

*Dominion Government Immigration Agent.*

DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

STATEMENT E.—List of retail prices of ordinary articles of food, required by the working classes at the Montreal Agency for 1898.

Provisions.	Prices.		Provisions.	Prices.	
	From.	To.		From.	To.
	\$	cts.		\$	cts.
Bacon, per lb.....	0	12	Herrings, per barrel.....	5	50
Bread, best white, 4 lb loaf.....	0	15	Mustard, per lb.....	0	30
"    brown, 6 lb loaf.....	0	15	Mutton, per lb.....	0	10
Butter, salt, per lb.....	0	17	Milk, per quart.....	0	05
"    fresh, per lb.....	0	20	Oatmeal, per 100 lbs.....	1	75
Beef, per lb.....	0	05	Pepper, per lb.....	0	25
Beer, per quart.....		00	Pork, per lb.....	0	10
Candles, per lb.....		05	Potatoes, per bushel.....	0	40
Cheese, per lb.....	0	13	Rice, per lb.....		00
Coffee, per lb.....	0	20	Soap, yellow, per lb.....	0	03
Cornmeal, per 100 lbs.....	1	50	Sugar, white, per lb.....		00
Eggs, per doz.....	0	15	"    brown, per lb.....	0	03½
Flour, 1st quality, per barrel.....	4	50	Salt, per lb.....		00
"    2nd ".....	4	00	Tea, black, per lb.....	0	30
"    buckwheat, per 100 lbs.....	2	00	"    green, per lb.....	0	20
Fish, dry or green cod, per cwt.....	5	00	Tobacco, per lb.....	0	25
Firewood, per cord.....	4	00	Veal, per lb.....	0	10
Ham, per lb.....	0	12	Coal, per ton.....	5	50
"    shoulders, per lb.....	0	08	Coal oil, per gall.....	0	17

JOHN HOOLAHAN,

*Dominion Government Immigration Agent.*

DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

STATEMENT F.—List of retail prices of the ordinary articles of clothing, &amp;c., required by the working classes at the Montreal Agency for 1898.

Clothing, &c.	PRICES.		Clothing, &c.	PRICES.	
	From.	To.		From.	To.
	\$ cts.	\$ cts.		\$ cts.	\$ cts.
Coats, under, tweed.....	4 00	6 00	Rugs.....	0 75	1 50
" over, ".....	8 00	12 00	Flannel, per yard.....	0 20	0 35
Trousers, ".....	2 00	3 50	Cotton shirting, per yard.....	0 08	0 10
Vests, ".....	1 00	1 50	Sheeting, per yard.....	0 08	0 15
Shirts, flannel.....	0 75	1 00	Canadian cloth, per yard.....	0 40	0 75
" cotton.....	0 50	0 75	Shoes, men's.....	1 50	2 50
" under, "wove".....	0 40	0 75	" women's.....	1 00	2 00
Drawers, woollen, "wove".....	0 40	0 75	Boots, men's.....	2 00	3 50
Hats, felt.....	1 00	2 00	" women's.....	1 50	2 50
Socks, worsted.....	0 15	0 40	India rubber overshoes, men's....	0 50	0 75
" cotton.....	0 10	0 25	" " women's.....	0 35	0 50
Blankets.....	2 00	4 00			

JOHN HOOLAHAN,

*Dominion Government Immigration Agent.*DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

STATEMENT G.—Average rate of wages at the Montreal Agency, 1898.

Employment.	WAGES.		Remarks.
	From.	To.	
	\$ cts.	\$ cts.	
Farin labourers, per month and board.....	10 00	15 00	The average cost of board and lodging for workingmen is \$3 to \$3.50 per week.
Female farm servants, per month and board..	6 00	9 00	
Masons, per day.....	2 00	3 00	
Bricklayers, per day.....	2 50	3 50	
Carpenters, per day.....	1 50	2 00	
Lumbermen, per month with board.....	15 00	20 00	
Shipwrights, per day.....	2 00	2 50	
Smiths, per day.....	1 50	2 00	
Wheelwrights, per day.....	2 00	2 50	
Gardeners, per month with board.....	12 00	18 00	
Female cooks, per month.....	8 00	12 00	
Laundresses, per day.....	0 75	1 00	
Female domestics, per month.....	6 00	10 00	
General labourers, per day.....	1 00	1 50	
Miurs.....	1 25	1 50	
Mill hands.....	1 00	1 50	
Engine drivers.....	2 00	2 50	
Saddlers.....	1 00	1 50	
Bootmakers.....	1 00	1 50	
Tailors.....	1 50	2 00	
Tinsmiths and plumbers.....	1 50	2 00	
Machinists.....	1 50	2 00	
Electricians.....	1 50	2 00	

JOHN HOOLAHAN,

*Dominion Government Immigration Agent.*DOMINION GOVERNMENT IMMIGRATION AGENCY,  
MONTREAL, 31st December, 1898.

## Department of the Interior.

### REPORT OF THE IMPERIAL AND ROYAL AUSTRO-HUNGARIAN CONSUL.

*(Appended to Agent Hoolahan's Report.)*

MONTREAL, 20th December, 1898.

The influx into Canada recorded last year of Austro-Hungarians, more especially Galicians and Buckowinians, has kept up at the same large proportions during the present year and it is most gratifying that all the reports coming from Manitoba and the North-West Territories, where most of them go, speak uniformly laudably of their thrifty and industrious habits and show the rapid progress of the various settlements.

Considering that nearly 10,000 of these people arrived in Canada during the last two years, the percentage of those who have been obliged to look for Government assistance is exceedingly small and must, in nearly all cases be ascribed partly to the difficulty of cultivating the soil in some parts of their settlement and partly to the existing prejudice of the older settlers in some places against these people in the matter of giving them employment, as wherever they have been given a fair chance they have invariably come out with great credit. Of course their foreign language, habits and dress have created this prejudice against them, but the better they become known the more their worth is found out and acknowledged. They are born farmers and readily adapt themselves to Canadian climate and habits, and more than other nationalities, have learned to quickly assimilate themselves. As proof of this, the desire of these people to have their children educated in English schools, may be cited.

Only few complaints have been made to this office by these settlers, which in nearly all cases originated in their lack of understanding the English language and the consequent temptation of their neighbours to take advantage of them. All complaints have been readily adjusted by the various immigration officials in charge of the respective districts.

On the other hand, there have been received quite a number of proofs that these people are well satisfied with the possibilities of Canada as a farming country. Quite a number of them who came out alone leaving their families meanwhile in Austria, have either gone back for a visit to the old country in order to settle all their affairs there previously to bringing their families to Canada, or have sent passage money, not only for their families, but also for friends to come out here.

One remarkable instance occurred through a Galician family, consisting of parents and two children arriving from Manitoba in Montreal with a through ticket to Galicia. This family intended to leave Canada for good for some reason or other; however, on their trip to Montreal, changed their mind, and the passage money to Galicia being refunded, they went back to Winnipeg, being well cared for here by the local Dominion Immigration Agent.

Quite a number of families arrived at Montreal from Austria via New York and have been looked after and taken care of here by Mr. Hoolahan, the local Dominion Immigration Agent, to whom and to whose staff the attention given to these people must be most gratefully acknowledged.

If it had not been for the lack of direct passenger communication between Hamburg and the St. Lawrence during the shipping season, the immigration of Austro-Hungarians might have assumed even larger proportions, as the route via Halifax is not very popular and certainly somewhat circuitous, and as the steamship line merely touches Halifax on the way to New York for the purpose of landing Canadian passengers it is safe to presume that there might have been some discrimination against Canada in favour of the United States by the Hamburg agents of the line.

As repeatedly pointed out, while the Imperial and Royal Government does not in any way encourage emigration, but on the contrary tries to discourage such a movement, those who really wish to emigrate are as far as possible directed to those countries where the climatic, social and political conditions are such as to guarantee to the intending settlers a solid basis of prosperity. Such influence can only be brought to bear in

the Austro-Hungarian ports, Trieste and Fiume, from where direct steamship communication to Canada should be strenuously sought after, as any possible control over the intending immigrants must cease if they ship in foreign ports where they become more or less the prey of the various steamship agents, who oftentimes persuade them against their will to accept passage wherever it best suits the agents. With a direct line from Trieste and Fiume a very desirable immigration movement to Canada from the Austro-Hungarian Monarchy might take large proportions.

SCHULTZE,  
*Imperial and Royal Consul.*

### REPORT ON THE ANDREWS HOME, MONTREAL.

*(Appended to Agent Hoolahan's Report.)*

The Andrews Home was established by the Lord Bishop of Montreal for advising, assisting to obtain employment and caring for all English immigrants who may wish to take advantage of the benefits conferred by the Home. A warm welcome is given to all emigrants. A nominal charge is made for meals and lodging.

The Home is under the direction and management of a corporation and house committee composed of some of the leading gentlemen of the city. The Revd. J. Frederick Renaud, immigration chaplain and secretary, who also is chaplain for the S. P. C. K. of London, the Church Emigration Society and the Liverpool Self Help Emigration Society, is in direct supervision of the Andrews Home, the Lord Bishop of Montreal being President of this Corporation.

#### THE WORK OF THE HOME FROM 1ST DECEMBER, 1897, TO 30TH NOVEMBER, 1898.

Individual visits to office, men only.....	1,376
Total No. ".....	2,144
Newly arrived, men, women and children.....	828
Remained in city.....	238
English letters received.....	168
"    written.....	103
Canadian letters received.....	643
"    "    written.....	566
Letters received for immigrants.....	604
Lads from 16 to 20, visitors.....	158
Situations secured.....	182

#### WOMEN'S DEPARTMENT.

Visits to matron's office.....	1,897
Applications for girls.....	609
Girls applying for places.....	130
Situations obtained for girls.....	69
Newly arrived, women and girls.....	215
Total No. of visitors to both offices.....	4,041
Total No. of situations, male and female.....	251
Total No. of newly arrived immigrants who have benefited by the Home.....	828
Total No. of meals furnished.....	21,036

J. FREDERICK RENAUD,  
*Chaplain and Secretary.*

Department of the Interior.

REPORT OF THE PROVINCE OF QUEBEC IMMIGRATION OFFICE,  
MONTREAL.

(Appended to Agent Hoolahan's Report.)

MONTREAL, January 2nd, 1899.

JOHN HOOLAHAN, Esq.,  
Dominion Government Immigration Agent,  
Montreal.

Sir,—I received some time ago your letter asking a report of the class of immigrants received at this office and placed in this province during the year ending December 31st, 1898.

Two thousand four hundred and eighty-six (2,486) immigrants, mostly from Great Britain, registered here and settled in this province. Nearly all were farm labourers and settled in the Eastern Townships. I have received letters from many of these people, saying they were doing well and were satisfied.

Mr. Walter Hazell, M.P., of London, who came over last fall as a delegate from the Self Help Emigration Society and The East End Emigration Fund of England, went through the Eastern Townships visiting their people and found all of them doing well, considering the short time they have been in the country.

French and Belgian immigrants have not been as numerous as in former years.

There has been an increased demand for farm labourers during the past year; I have been unable to fill all the applications made to me for farm help.

During my visit to England in November last, I had the pleasure of meeting many ladies and gentlemen interested in immigration work and I think there is a prospect of an increase in immigration for the coming year, and that if we could offer a little more inducement to intending emigrants in the way of helping them a little toward their passages, we could get more of the agricultural class from the country districts in Great Britain to come to Canada.

As far as this province is concerned we have every reason to be satisfied with the result of last year's work and with the quantity and quality of our new arrivals.

Believe me, Sir,

Yours sincerely,

E. MARQUETTE,  
*Province of Quebec, Government Immigrant Agent, Montreal.*

REPORT CONCERNING DR. BARNARDO'S HOMES.

(Appended to Agent Hoolahan's Report.)

214 FARLEY AVENUE, TORONTO, 10th December, 1898.

JOHN HOOLAHAN, Esq.,  
Dominion Immigration Agent,  
Montreal, Que.

Sir,—The child emigration movement, as we have cause to judge of it from our experience during the past year, is continuing to demonstrate itself to be a great and unqualified success. Those who are prejudiced against the work, and those who are



actively opposed to it, are finding their objections answered, and we hope in many cases their opinions modified, by the spectacle of the great number of these young people now growing up in all parts of the country to manhood and womanhood, and developing into honest, industrious, respectable, useful citizens. The immigration of the past season has brought the number of boys and girls sent from England under Dr. Barnardo's auspices to a total of 10,040, and of this great number, equal to the population of a city, less than a score are inmates of hospitals, penal establishments or charitable institutions. There are about 250 little children of tender years whose maintenance in farm households is being paid for from the funds of the institution while they are attending school, but with the exception of this number who are boarded out, the young people under our charge are supporting themselves honourably by their own industry. They are not congregating to the cities and towns to glut any overstocked labour markets, but their homes and places of employment are in the country among the farming community, where their labour is in demand, where they are making "two blades of grass grow where one grew before," and where their industry is adding directly to the wealth and productiveness of the Dominion. We have no unemployed, no social agitators, no shiftless adventurers waiting for "something to turn up," and we add none of those elements to the population that tend to subvert government and to reproduce in the new world the vices and disorders of the old. Year by year we find the demand for our boys and girls grow with the growth of the country, and during the past season it has been many times over in excess of the supply. Very early in the season we had over a thousand applications on our books and not a day has passed without adding to the number. The demand has been especially active in Ontario and Manitoba. In the west the boys are in demand for herding, and the sight of our little lads cantering about on their Indian ponies in charge of bands of cattle or sheep is a very familiar one on the prairies. The boys enjoy the life, which is a splendidly healthy one for them, and it has the advantage of leaving them free during the winter months to attend school.

The total number of our fresh arrivals during the past season is 617, including 242 girls and 375 boys. The young immigrants crossed in four detachments. The first, consisting of 160 boys, left Liverpool on the 31st of March, and disembarked at Halifax on the 9th of April. The second, composed of 122 boys and 101 girls, sailed on the 14th of July, arriving on the 23rd. These were followed a week later by a small contingent of 28 youths, while the fourth and last party, consisting of 120 girls and 85 boys, left Liverpool on the 15th of September, and landed at Quebec on the 24th.

We have again confined ourselves to the Dominion Line for the conveyance of our parties. The accommodation provided on board the steamers has been most satisfactory, and all the arrangements for the transportation of our young immigrants have been admirably carried out. The dietary becomes every year more and more liberal and varied, and the food better served, and the old hardships and discomforts associated with the idea of an "emigrant" ship are among the memories of the past. No Company could be more generous than the Dominion Line in its provision for the comfort and welfare of steerage passengers, and when one sees the airy, well warmed and well lighted quarters, with the neat white cloths on the dining tables, upholstered seats, cosy little cabins, piano, smoking room, excellent lavatory and sanitary appliances and large staff of well trained stewards in attendance, one can easily believe that very many of the passengers are enjoying a greater degree of comfort than they have experienced in their lives before.

The past year has added considerably to the number of our "old boys" who have settled on land of their own, either in the North-West or in the Algoma Districts, and we have received many most interesting letters from these young settlers giving us an account of their first experiences in making homes for themselves. Their capital consists entirely of their savings during the years that they have been working as farm hands, and when a lad has shown sufficient strength of purpose and self-denial to save from two to five hundred dollars from the wages he has earned on an Ontario farm, we think we may claim for him that he is built of the right stuff to make a successful settler on a homestead of his own.

A gratifying feature of our last year's work has been the number of boys who have assisted in the emigration of other members of their families. One lad has provided

## Department of the Interior.

the funds to enable his mother, sister and younger brother to join him in Canada, and this is by no means an isolated case. We have had a good many such commissions entrusted to us during the past twelve months, and we have seen some most happy reunions between members of families, that were perhaps broken up years ago through the death or ill-health of the father or failure of employment in England.

An excursion party made up of such of our former immigrants as are determined to spend Christmas in the old country, has become a regular annual event with us for several years past, and this year a party of very fine young fellows left Montreal by the last Dominion Line Steamer for the season. Their arrival in Liverpool was noticed by one of the leading Liverpool dailies in the following paragraph:—

“Dr. Barnado’s ‘Old Boys’ re-visiting England.—The ‘Scotsman’ of the Dominion Line Company, which arrived from Canada yesterday afternoon, brought over an interesting party of old boys from Dr. Barnardo’s homes, who have come on a holiday to visit the old country again, and to spend Christmas in Old England. It was difficult to realize that these well-dressed, bronzed and stalwart young fellows, whom any country might feel proud to possess, were so recently the waste material of our streets. Most of them have substantial banking accounts, and this round trip will cost each one sixty dollars. The lads are advised not to expend their hard earned savings upon these trips, but it is found that among the army of over 10,000 young emigrants who have gone forth from the homes, some are always desirous of visiting the old country again, which they would do singly, or in twos and threes. To meet this want, Mr. A. B. Owen, agent of the homes at Toronto, arranged these annual trips, whereby they might travel together in comfort, for which special facilities are given by the Dominion Line Company. They were met upon arrival and welcomed by Mr. D. G. Cole, of the Liverpool ‘Ever Open Door.’ Some are Liverpool lads, and others from various parts of the kingdom, and all speak well of their Canadian experience and prospects. They will assemble again in Liverpool early in the New Year to return to their Canadian homes.”

Our little quarterly magazine “Ups and Downs,” that circulates largely among our boys and girls, and is devoted to their interests, has increased in size and in circulation during the past year. It has served its purpose of promoting a wholesome esprit de corps among our young folks, and constitutes a pleasant little bond of union between themselves and those who represent the parent institution in Canada and have charge of their interests.

It remains only for me to express anew our grateful appreciation of the never failing courtesy and kindness that have marked the conduct of the officials of the Department in all their relations to our work. We are conscious that our methods are subjected to a strict inspection and oversight, by which any disposition to carelessness in the selection of the children or failure to weed out undesirable candidates for emigration would be speedily detected. We have no reason to shrink from the most rigid inspection, and on the other hand we have found on all occasions a readiness to offer us the fullest possible facilities in carrying out our arrangements, and to give a hospitable and friendly welcome to the young strangers in a strange land. Personally and on behalf of those whom I represent, I desire once again to express our sense of obligation to those from whom we have received so much kindly help and consideration, among whom we must always give a foremost place to yourself and your very efficient assistant, Mr. Regimbal.

I have the honour to be, Sir,

Your obedient servant,

ALFRED B. OWEN.

## REPORT OF THE WOMEN'S NATIONAL IMMIGRATION SOCIETY.

To JOHN HOOLAHAN, Esq.,  
 Dominion Government Immigration Agent,  
 Montreal.

The Committee of the Women's National Immigration Society (formerly known as the Women's Protective Immigration Society of Montreal), have much pleasure in presenting to their friends and the public their seventeenth Annual Report.

264 immigrants have passed through the Home during the past year,—150 English, 28 Irish, 68 Scotch, 4 Welsh, 1 French, 3 Swedes, 4 Danes, 4 Germans, 2 Assyrians. 148 Church of England, 29 Roman Catholics, 73 Presbyterians, 3 Baptists, 1 Methodist, 1 Congregational, 8 Lutherans, 2 Greek Church.

40 girls of former years returned to the Home to board until replaced.

Six parties, under the care of a travelling matron, were sent out by the Hon. Mrs. Joyce, St. John's Croft, Winchester, through the auspices of the United British Women's Emigration Association, comprising in all 128 young women.

4 girls were sent out by Mrs. Foster, Queen's Square, Bristol.

7 girls returned to England.

It will be seen that the total number of immigrants is considerably larger than last year. The cut rates to the North-West proved a great attraction and the larger number of immigrants passed straight through to Winnipeg and Vancouver, where they come under the kindly influences of the Girl's Home of Welcome in Winnipeg, and the Committee of the Women's Council in Vancouver. We cannot but rejoice at this, knowing the great need of the North-West; but we would remind the friends of emigration that there is also a continuous demand for well trained servants in our Eastern cities, and that women who are not prepared to face the rougher conditions of life in the North-West can find high wages and comfortable situations in Montreal and other Eastern cities. In many cases places can be secured beforehand for such servants.

Of the 128 emigrants sent out by the United British Women's Emigration Association, 23 remained in Montreal for service. All these emigrants were of the right kind, and gave evidence of the care that is taken by that society in selecting suitable subjects for emigration. It is to be wished that a larger number still availed themselves of the excellent travelling arrangements and the careful guidance of experienced matrons provided by this society.

We regret to record the giving up of the Wortley Rest for Women Emigrants in Liverpool owing to the bereavement of Mrs. Drysdale, who has for many years been its main support. Its place is partly supplied by the Home of the Young Women's Christian Association and arrangements have also been made elsewhere.

Their work in Scotland has been supplemented this year by the Canadian Government, who sent over a lady, with a view to meeting the needs of the North-West by inducing the emigration of a large number of respectable young women prepared to take service on farms.

In June, 60 Scotch girls were selected and brought out under Mrs. Livingston's capable and careful direction. Places had been found for them beforehand and they were forwarded to their destinations after passing a night in Montreal; 34 were accommodated at the Home and 26 found a friendly shelter at the Home of the St. Andrew's Society. We hope next year to be able to report as to the success of this experiment, which it is hoped will be repeated, as we are convinced that in careful hands, it is one of the best pieces of work that can be done for Canada. It would seem well, if possible, to bring the girls over in smaller parties as with so large a number as 60, it is difficult to give the individual care that is necessary in effecting the transition to a new country, and only those who have had charge of such parties on board ship are aware of the great difficulties that arise, due not only to the inevitable "mal de mer," but to sudden relaxation of the ordinary routine and the familiar restraints of life in the old country. It cannot be too clearly realized that such work to be well done involves qualities of a

## Department of the Interior.

high order; and upon it depends largely the attitude of mind with which the immigrants approach their new life, and often the success or failure of their first settlement.

Of the 7 returned immigrants referred to above, 5 were women with such a want of mental balance, amounting in some cases to actual disease, as to be unfit subjects for colonization, and it cannot be too strongly urged on those who recommend people to come out to Canada that our free life and exhilarating climate demand a thoroughly sound mental condition, and that it is most unwise to transfer to Canada, nerves shattered by trouble, or cases of congenital hysteria. Thanks to the laws of the country we are usually able to return such cases with free passage but there is always a useless waste of money incurred by others, and the home has usually the burden of their support till they are returned.

The joint sub-committee for the active furtherance of Women's Immigration reports that owing to the decision of the Government, to employ their own woman Agent in Scotland, they undertook no action in that country.

In regard to Scandinavia, we have now received from the Canadian Government the promise of a bonus on all women immigrants we may obtain in those countries; and are thus encouraged to proceed with the work. Some time was spent last year in endeavouring to make arrangements from this side, but it was hoped that a member of the Committee who was spending the summer in England would be able to visit Sweden and make personal inquiries. This proved impossible, and we are now making an attempt by correspondence, though we feel it is probable that a personal visit will be needed before satisfactory arrangements can be concluded.

Owing to the extension of the Canadian Pacific Railway sheds, it became necessary this summer to vacate the house, 84 Osborne St., which had to be pulled down, and on July 12th the Home transferred its quarters from 84 to 87 Osborne Street, a bright, commodious house on the other side of the street. The change necessitated very hard work on the part of those ladies of the Committee who remained in Montreal during the summer, but thanks to their exertions and those of the household the change was effected with great economy and success. We have better accommodation and a more cheerful house, but have had to increase our rent. We are thankful to have secured a house so conveniently near to the railway stations, and feel ourselves in every way well equipped for our work.

During the summer we received a visit from Mr. Hazell, M.P., who is interested in the Self Help Emigration Society, and who inspected the Home.

In the new year we had a successful gathering of former immigrants, now in service in the city, and spent a pleasant and lively evening together; since then a member of the committee has kindly come down every Sunday evening to the Home to welcome any of these girls who are to come in and spend a homely and pleasant hour after church. We hope in this way to make the Home attractive and friendly to our girls, as we wish them to feel that it is always a friend to them and that they can look to the matron and secretary for counsel and help at any time.

Many of our old members return to us to board in between places. In order to prevent too frequent change of place, the committee has lately imposed a fee of 25 cents on replacement.

The old arrangement continues in force by which the girls on first settling are recommended to the clergyman of their special church in the parish where they settle.

The Rev. James Patterson, Presbyterian city missionary, has visited the Home at frequent intervals and receives from the secretary the address of all Scotch girls placed in Montreal.

By a recent arrangement the matron is informed by telegram from the Government agent at each place of landing if any single woman immigrant is coming on to Montreal by train, and is enabled to meet all such immigrants on arrival. This is an extension of our previous work in meeting all immigrants who had personally notified us of their coming. In this work we had the kind and active co-operation of the Dominion Immigration Agent, Mr. Hoolahan, and the Provincial Immigration Agent, Mr. Marquette, to whom with their sub-agents the committee are specially indebted. This is at present the only contribution towards the work of the Travellers Aid Society that is made in Montreal, but it is greatly to be desired that a regular agent of the Travellers Aid

Society should be settled in Montreal, which is now such a centre of travel as to make such work almost imperative.

In conclusion the committee wish to express their sincere thanks to Dr. Grace Ritchie, England, the hon. visiting physician, for her kind services to the immigrants whenever need has arisen ; and they would acknowledge many kind gifts towards the expenses of the move, &c.

EVA VOSBURGH,  
*Secretary, W.N.I.S.*

#### REPORT OF THE CHILDREN'S DISTRIBUTING HOME, KNOWLTON.

*(Appended to Agent Hoolahan's Report.)*

To Mr. JOHN HOOLAHAN.

DEAR SIR,—In reply to yours of 21st November, would say 83 boys and girls were brought out in April and June, 1898, by Mrs. Birt ; all have been placed in homes and situations. Seventy-one have returned for one reason or another ; these also have been replaced, and six children are at present in the home. Five hundred and eighty-seven applications have been received from farmers and others, for the help these young people could afford, since 1st January, 1898. By this you will see the demand is far greater than the supply. Three paid gentlemen visitors are employed looking after the children when placed out, besides some of the resident workers in the home. The Rev. E. M. Taylor visits in the counties of Brome, Missisquoi, Shefford, &c., Mr. John Parker, in Megantic, and Mr. J. W. McOuat, in Argenteuil.

I remain,

Yours truly,

for MRS. BIRT.  
L. M.

#### REPORT OF THE MARCHMONT HOME, BELLEVILLE, ONT.

*(Appended to Agent Hoolahan's Report.)*

DEAR SIR,—In reply to yours asking for a report of the work of this home for the current year, I regret that there is very little to say. Owing to the action of the Ontario Legislature in passing an Act placing restrictions and penalties on private benevolent Christian work for children we have curtailed our work very much and some homes have stopped bringing out children altogether. Our numbers as you know have always ranged between 200 and 300, and occasionally over 300, but this year we have only brought 48 all told, consisting of 25 boys of the average age of 15, and 23 girls whose average age was 13.

These children are all practically guaranteed and if found not suitable will be sent back and never become a burden on the country.

Yours truly,

ROBERT WALLACE.

## Department of the Interior.

### REPORT OF THE CATHOLIC CHILDREN'S PROTECTIVE SOCIETY.

(Appended to Agent Hoolahan's Report.)

ST. VINCENT RESCUE HOME,

11 St. Thomas Street,

MONTREAL, 31st December, 1898.

To Mr. JOHN HOOLAHAN,  
Dominion Immigration Agent.

SIR,—In placing before you my report of the last year's work, I must again say that the demand for my girls is still very great.

I have standing over on my application list 200 names, asking for girls from 10 to 14 and 16 years of age.

In the spring season I received 34 children, 18 males and 16 females, and in the month of September, 24, 14 males and 10 females, making a total for the year of 58 children.

The children came to me from the Liverpool Catholic Children's Protective Society's Home, 99 Shaw Street, Liverpool, England; they are transferred to me by the Lady Superintendent, Miss L. M. Yates. The children range in age from 2½ years up to 16. They all seem well disposed, healthy and happy, and were all placed in a few days.

Through the year we have received back into the Home 18 or 20 girls. These girls have now been in Canada for 3 or 4 years and we replaced them by others, giving better places to those larger girls, who can now command better wages. This year we have prepared 16 children for their first communion and confirmation.

Through the kindness of His Grace the Archbishop I have had the assistance of the Rev. F. Savord and Rev. F. Belleau, of St. Ann's parish. I must thank those kind fathers in the name of the children for all their trouble.

During the year I visited in company with Miss L. M. Yates and Miss L. Cawley about 150 children. With the exception of 3, we found them all well and happy, some working for wages, others going to school. At present I have in the Home 3 little boys, 6, 7 and 8 years of age respectively. Sunday afternoons all the girls and boys employed in the city come to the Home and spend 2 or 3 hours together making themselves at home; singing and playing. Last Sunday I received 14 girls and 6 boys, all happy in having prepared a nice Christmas tree for the little fellows still in the Home, for which between them they gave me the neat little sum of \$9.50. I received also \$2 from a young man in Ottawa, who remembered the little fellows he left behind.

Through the kind permission of His Grace the Archbishop we are having our second annual concert in aid of our Home, some kind friends having asked me to allow them to take a part in the good work of looking after the little strangers, knowing that our boys and girls are not yet able to earn enough to give anything towards the maintenance of the Home. I wish to convey to His Grace my sincere thanks for his kind favours.

I also wish to thank the Grand Trunk and Canadian Pacific Railway Companies as well as their employes for their great kindness to our little ones, who sometimes have to travel many miles under the care of the kind conductors. Up to the present I have never had a child go astray.

In submitting to you this report I will ask you as a favour to convey my sincere thanks to the Department of Immigration for all their kindness to me for the last four years, as without their kind assistance it would be impossible for me to master all the duties of my position.

Please accept my grateful thanks for yourself and your able assistant, Mr. A. Regimbal, for all your kind favours during the past year.

I remain yours very respectfully,

AGNES BRENNAN,

*Superintendent.*

## REPORT OF THE SOUTHWARK CATHOLIC EMIGRATION SOCIETY.

(Appended to Agent Hoolahan's Report).

149 BERRI STREET, MONTREAL, 15th December, 1898.

To JOHN HOOLAHAN, Esq.

DEAR SIR,—We have much pleasure in complying with your request for a short statement of our work during the present year. We have emigrated this year fifty-one girls varying in age from fourteen to twenty-five. They are most of them in domestic service in Montreal. We have as you know changed our place of residence as we soon outgrew our first house, and are now feeling that we must have more room. We are satisfied with the prospects of our girls; they are all succeeding very well with only two or three exceptions. We have not returned any girls to England, as unsuitable emigrants; one will, however, have to be returned owing to ill-health.

We have this year commenced the plan of keeping two girls constantly in the Home for the purpose of giving them a few months preliminary training in domestic service.

Weekly cooking lectures and demonstrations have also been started by Miss Malloch, who is assisting us in our work, and who is also a first-class diplomée of one of the best English cooking schools.

We have also to thank you personally for the great trouble and time you expended over one of our cases in which a girl was illegally detained without wages by an employer; and though unfortunately there was no redress which your Department either here or in Ottawa could procure for this society, still your kindness in the matter was very much appreciated by us.

With regard to the Boy's Branch of the Society's work we have to say that the society emigrated this year 95 boys, varying in ages from 12 to 16, only a few of them being over 16. The first party came out in March, and consisted of 12 boys. In June 40 more arrived, 28 in August and 13 more in October. The boys were most of them placed on farms in the province of Ontario. A small contingent of boys over 16 went on to our farm at Makinac, Manitoba. The Rev. Lord Archibald Douglas has been personally superintending this part of our boys work, and has been living on the farm since June. He has great hopes from the beginning which has already been made at Makinac and he hopes that the farm will form a nucleus for a settlement of "Old Boys" who have already begun to take up farms in the neighbourhood. The farm is being rapidly improved, several new buildings having been erected this summer, as well as a small church.

The younger boys who are on farms in Ontario have been settled principally along the Ottawa Valley, north of Ottawa. They have been very satisfactory on the whole. We have had to return one boy only to England and this was on account of an affection of the eyes, which seemed to grow worse in this climate. One of the difficulties of the work we find to be the restlessness of the boys, to whom the life of farming is at first new and strange, and the ease with which the farmers will send boys away on any pretext when the work on a farm becomes slack. This leads to more changing of place than is at all desirable for the boys. There has been an alteration in the management of our work this year. The boys branch at New Orpington Lodge, Hintonburgh, Ottawa, has been placed under our supervision, as well as the girls' branch in Montreal. This arrangement was thought advisable as the work runs more easily when there is one centre to which all communications can be addressed.

We should like to mention how very kind the officials of the various railway and steamship companies have been to our boys, and to thank them for the trouble they have often taken so willingly for many of those boys, when they were travelling alone. We conclude by expressing our grateful thanks for the help and consideration we have always received from the officials of the Immigration Department, especially from yourself and your assistants.

## Department of the Interior.

Our emigration for the coming year should be larger, as another society is now to be amalgamated with ours ; so that we shall probably next year appear under a new name ; though the direction of the work remains as heretofore in our hands.

We are your obedient servants,

A. F. PROCTOR,  
H. URQUHART,  
*Agents Southwark Catholic Emigration Society.*

### SCANDINAVIAN NATIONAL SOCIETY OF MONTREAL.

*(Appended to Agent Hoolahan's Report.)*

180 ST. JAMES ST., MONTREAL, 5th January, 1899.

To JOHN HOOLAHAN, Esq.,  
Dominion Government Immigration Agent,  
Montreal.

DEAR SIR,—In answer to your letter of the 23rd of December, 1898, to the Scandinavian National Society of Montreal, I am directed to say that the society has, during the past year, given very little pecuniary assistance to immigrants. But we have given advice regarding work, &c., to quite many.

It is a pleasure for the society to acknowledge the official work done for our Scandinavian emigrants en route by yourself and officers. The work done by the Scandinavian interpreter in Montreal has considerably assisted our efforts, and has been duly appreciated by the emigrants.

Many Scandinavian emigrants passing through Montreal are bound for the United States, where they have, in general, friends and relations. Those intending to settle in Canada mostly always proceed to Manitoba and the North-West, as the Government of the province of Quebec offers no inducements to Scandinavian farmers to settle in this province. Consequently we have only to recommend Scandinavian farmers to go out west.

A good many Scandinavian female servants have during the past year arrived in Montreal, mostly through the efforts of Mr. C. O. Swanson, and they have in all cases secured good employment. For this class of emigrants there is always a large and steady demand.

I remain, dear sir, on behalf of the Scandinavian National Society of Montreal,

Your obedient servant,

T. G. WESTLING,  
*Corresponding Secretary.*



## CANADIAN CATHOLIC EMIGRATION COMMITTEE, WESTMINSTER.

LETTER FROM THE LOCAL AGENT.

*(Appended to Agent Hoolahan's Report.)*

MONTREAL, 9th January, 1899.

JOHN HOOLAHAN, Esq.,  
Dominion Government Immigration Agent,  
Montreal.

DEAR SIR,—The number of children received by me from the Canadian Catholic Emigration Committee in September last, was 28. They were all boys and the greater number of these were placed with farmers in the Parish of St. Michel Archange in Napierville Co., in the province of Quebec.

I have not as yet received one complaint of any one of them. There were a fine lot of boys, healthy and strong.

Yours truly,

ANT. ROBERT,  
*Agent.*

## Department of the Interior.

### BARON DE HIRSCH INSTITUTE.

*(Appended to Agent Hoolahan's Report.)*

During the year 1898, although no special effort has been made to encourage immigration, there has been a steady and continuous arrival of new comers of the Jewish religion. The majority of these were Russians, although the nationalities likewise included Germans, Galicians, Roumanians, Austrians, Hungarians, Poles, English and two families from France.

In consequence of the American war the Canadian ports were largely made use of by Jewish immigrants in order to reach the United States, and the Beaver Line alone brought in from the month of March to the close of navigation in November an average of 180 per week.

Most of these went forward to their destinations with their relations in the States. Of those who remained in Canada 197 received a temporary home in the Baron de Hirsch Institute. These have for the most part been assisted to form homes in Montreal. Seven families were sent to Winnipeg and five to the Society's Colony at Hirsch, Assa., N.W.T.

In the month of March, the Jewish Colonization Association of Paris, with a view to further developing Jewish colonization in Canada, sent over a special commissioner, who spent nine months in making investigations in various parts of Manitoba, Assiniboia and Alberta. He left Montreal on his return to Paris on 21st December. The results of his enquiries and the nature of his reports have not yet been communicated, but the opinions expressed by the commissioner prior to his departure to France were highly favourable to increased colonization in Canada.

With the same object in view the President of the Institute, D. A. Ansell, Esq., was invited to attend a meeting in Paris, in June last, of the Colonization Association, at which the leading Jewish philanthropists were present. They were extremely gratified at the report given by Mr. Ansell of the favourable conditions for emigration to Canada, and are considering the advisability of its still further development and of adding to the existing settlement at Hirsch in the North-West Territories. The Department of the Interior has been interviewed in relation thereto and has given promise of encouragement.

Two school buildings have been bought for this settlement, and schools will be opened in the "Hirsch" and "Ansell" school districts as soon as the winter is over.

W. H. BAKER,  
*Secretary.*

## REPORTS OF IMMIGRATION OFFICIALS IN WESTERN CANADA.

### No. 1.

#### REPORT OF THE COMMISSIONER OF IMMIGRATION.

WINNIPEG, MANITOBA, 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—My report for last year predicted a large immigration into Western Canada as likely to follow the systematic efforts then being made to attract it, and it is satisfactory to be able to exhibit in the following tables the results which fully verify that forecast. The total immigration in 1897, via Winnipeg, was 10,864 souls; the immigration of the past season by the same route, was 27,857. If we add 20 per cent to the Winnipeg register for arrivals by waggon (as, for example, the advent of 560 Americans from Utah into Southern Alberta), by the "Soo" Branch of the Canadian Pacific Railway, the Great Northern, Northern Pacific, and Great Falls and Canada Railways and the harvest excursionists who remained in the country, the immigration of 1898, deducting those who went to the Yukon, &c., (see table No. 4) will be found to be nearly three times greater than that of the preceding year.

The mode of calculation in vogue under the former Government was to multiply the number of homesteads by five, to show the number of immigrants. Each succeeding year that calculation would be more incorrect, as is proved by the much larger proportion of lands acquired by purchase on account of the homesteads being inferior and further from railways. But the number of homesteads entered in 1898 being 4,848, multiplying this by five would give a total, according to their mode of calculation, of 24,240, which would go to prove that my figures are well within the mark.

TABLE No. 1.—Showing the Number of Immigrants arrived at Winnipeg during the twelve months ending 31st December, 1897–98.

Port.	1897.			1898.		
	Males.	Females.	Total.	Males.	Females.	Total.
Winnipeg.....	6,705	4,159	10,864	19,015	8,842	27,857

TABLE No. 2.—Showing the Nativity of Immigrants arrived at Winnipeg during the year ending 31st December, 1897.

England.	Ireland.	Scotland.	Germany.	Scandinavian.	French and Belgian.	United States.	Canadian.	Galician.	Russian.	Other Countries.	Total.
1,519	69	205	520	474	383	712	2,373	4,363	28	218	10,864

## Department of the Interior.

TABLE No. 3.—Showing the Nativity of Immigrants arrived at Winnipeg during the year ending 31st December, 1898.

England and Wales.	Ireland.	Scotland.	Canada, including all the Provinces.	United States.	Scandinavia viz., Norway, Sweden and Denmark.	Germans from Germany, Austria and Russia.	France and Belgium.	Galicia and Buckowina.	Other countries.	Total.
3,203	266	701	13,112	2,643	532	998	368	5,509	525	27,857

TABLE No. 4.—Showing the declared destination of immigrants arrived at Winnipeg during the year ending 31st December, 1898; and the months in which they came:—

Declared Destination.	Ja .	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
Manitoba . . . . .	191	247	2,179	1,761	1,259	1,552	1,125	791	446	518	464	343	10,876
North-West Territories . . . . .	133	166	1,042	1,702	1,129	1,224	809	308	349	228	300	173	7,563
British Columbia . . . . .	134	272	1,780	1,011	630	520	322	350	523	217	339	165	6,263
Yukon . . . . .	85	621	1,404	505	200	41	10	.....	3	.....	1	5	2,875
													27,577

Total carried from the table . . . . .	27,577
Add immigrants arrived at Winnipeg and who went on to Western Ontario . . . . .	38
“ “ “ Western and Pacific States . . . . .	242— 280
	27,857
Add 20 per cent for arrivals by waggon and lines of rail beyond Winnipeg . . . . .	5,571
	33,428
Deduct from above departures to Yukon, Western Ontario and Western and Pacific States . . . . .	3,155
Grand total . . . . .	30,273

### IMMIGRATION FROM THE UNITED KINGDOM.

Referring to this class of immigration, it is unnecessary to say much here, except to point to the improvement in its volume, compared with the previous year, as an encouraging feature and indicative of the influences at work in Great Britain, which may yet lead to greater results.

### IMMIGRATION FROM THE UNITED STATES.

The most hopeful indication, indeed, now apparent is the great movement hither of American agriculturists. This movement is not only sudden but unmistakable, the accessions from that country being only 712 in 1897, whilst the past year has brought

us through this port alone 2,643 souls. This is perhaps, the most remarkable feature in the development of immigration to Western Canada. The vast number of Canadians who have been settled for many years in the American West, and the genuine American farmer as well, are now turning their eyes to Western Canada, and this interest should be stimulated as much as possible, since it needs no argument to prove that such a class are most desirable immigrants to a country like this. The immediate result of the work being done there is as we have seen. But this is nothing to the promise of the greater results indicated by the numerous delegations during the past year from the American States selected at public meetings held in their various localities for that purpose, and, thus accredited, despatched by the Immigration Commissioner from Winnipeg, accompanied by capable officials, to examine the interior of the country at will.

#### DELEGATES.

During the past year some 209 American delegates visited Western Canada, and, mainly in groups, made an extended tour of the country, and after reporting to the Commissioner in Winnipeg returned to report to the communities who sent them. The unanimity of these reports is remarkable. The parties came from Michigan, Wisconsin, Illinois, Indiana, Iowa, Minnesota, North and South Dakota, Kansas, Nebraska and Missouri; and the burden of all was the same—rich soil, hard wheat, fat cattle and a good climate—as fine a country, indeed, as the most exacting farmer could desire. They had conversed with multitudes of settlers who came here with little or nothing, and are now well off, and they saw likewise, a well-governed country, lightly taxed, with schools in every settlement and the appliances of transport and domestic comfort multiplying around them. There can be little doubt that these reports will stir up much interest and inquiry; at all events, it is quite certain that the coming season will witness a large, perhaps a very large, accession to our population from the Western States.

It must also be borne in mind that these delegations have been encouraged by the Canadian Pacific Railway authorities, whose treatment has been of the most liberal character, and who in every possible way have facilitated the movement set on foot by the Government agents in the United States. The same may also be said of the Calgary and Edmonton, the Qu'Appelle, Long Lake and Saskatchewan, the Manitoba and North-Western and the Lake Manitoba and Canal Company Railways, which alike contributed towards the desired end, and facilitated, as much as possible, the movements of delegates over their lines.

#### GALICIAN IMMIGRATION.

In my report of last January, it was stated that of the Galician arrivals during the season of 1897, apart from those who had taken employment with farmers, had some settled at the colony below Fort Saskatchewan and at the Stuartburn Colony near Emerson, but the majority at the new colonies organized near Yorkton, Saltcoats and Dauphin. The total number who arrived during that season was 4,363, and during the season just past 4,436. The latest arrivals, saving those drawn off to domestic service, &c., have been all distributed amongst the various colonies already formed, these proving to be convenient *nuclei* for their settlement.

## Department of the Interior.

The following table shows their numbers and distribution during the past year:—

Place of Settlement.	Males.	Females.	Year of Arrival.
Edmonton .....	705	642	1898.
Dauphin .....	302	250	“
Stuartburn .....	215	194	“
Yorkton .....	272	256	“
Brokenhead .....	75	60	“
Pleasant Home .....	320	285	“
Winnipeg .....	102	50	“
Sifton .....	52	55	“
Whitewood .....	19	21	“
Grenfell .....	14	9	“
Saltcoats .....	24	26	“
Fish Creek .....	220	190	“
Huns Valley .....	27	26	“
St. Norbert .....	9	8	“
Cook's Creek .....	4	4	“
Total .....	2,360	2,076	

### THE DOUKHOBORTSI.

As only two families of these immigrants have so far reached here, and as these are still in Winnipeg waiting the arrival of the first instalment of their compatriots, nothing can be said as yet as regards their condition and prospects.

On September the 15th last I received a letter from the High Commissioner in London, dated the 26th August, introducing Mr. Aylmer Maude, and stating that he would accompany the two families of Russians to Winnipeg. His Lordship stated that they had some means, were practical farmers, and if they liked the country, would be followed by others of their compatriots. On 3rd September instructions were forwarded to me from the Department to make arrangements for their examination of the country. They were joined here by Mr. Aylmer Maude on the 15th, and after he and Prince Hilkoﬀ had consulted with yourself, immediate arrangements were made for their trip through the country.

Their first visit was to the Edmonton district, and on their return from that point I sent them to the Moose Mountain district, after which they visited the Swan River and White Sand River regions, where they eventually made their selections. These selections are in the angles formed by the junction of the province of Manitoba with the south-east and north-east corners of Saskatchewan and East Assiniboia territories, respectively; the second settlement being solely in North-Eastern Assiniboia and about fifteen miles south-east of the first, the two colonies being respectively tributary to the Manitoba and North-Western and the Dauphin Railways.

The first instalment of Doukhobors, numbering some 2,200 souls, it is expected will arrive about the middle of January, 600 of whom will be housed in the immigration hall here, and the others elsewhere.

### SCANDINAVIANS.

This excellent class of immigrants has arrived slowly during the past ten years, and has formed some twenty small settlements numbering about 3,400 souls. There is,

besides, a settlement of Finns, of some 240 souls, increased by 45 additional immigrants this year. The latest small settlements are at Gonor, Morris and Foxton, formed in 1896, 1897 and 1898 respectively, and numbering only some 90 souls. But to the foregoing numbers must be added a good many Scandinavians scattered amongst our Canadians, and the population represented by 245 homestead entries made since 1896—thus swelling the total to something like 5,000 souls. Northern Alberta seems to be their favourite district, as 110 of the homestead entries have been made there in the last two years. Reports received indicate that the settlers are prosperous and generally contented.

#### HUNGARIANS.

The Hungarians have formed five distinct settlements—the Huns Valley, Otthon, Kaposvar, Esterhaz and Lethbridge—which number, in all, probably a thousand souls.

On the 6th of December last, Zoltan Von Rajcs, an Hungarian gentleman who has undertaken a special mission of inquiry into the condition and progress of his compatriots in the foregoing settlements, arrived in Winnipeg. On the 8th he left in charge of one of our officials with full instructions and letters of introduction from myself in connection therewith, the intention of Mr. Von Rajcs being to make a thorough examination of the country with a view to writing a pamphlet in his own tongue on its resources and advantages as a field for Hungarian immigration. Probably no better class could be attracted to this country than these people, celebrated as they are throughout Europe for wheat-raising and flour exporting, and an orderly, law-abiding race as well.

#### GERMAN AND OTHER NATIONALITIES.

There is a considerable German settlement at Langenburg on the Manitoba and North-Western Railway, and a very prosperous one at Ebenezer, north of Yorkton. This latter was formed by a people the most miserably poor, perhaps, of all who have ever come to this country, and to-day they are counted amongst the most prosperous of our settlers.

The Bohemians have a settlement on the Brokenhead River east of Winnipeg. They are not direct from Bohemia, but from Galicia, into which province they had originally immigrated. These have been joined lately by a small contingent from Texas numbering eleven souls.

#### IMMIGRATION FROM OUR EASTERN PROVINCES.

A reference to Canadian immigration is reserved to the last. This immigration does not add, of course, to the population of the Dominion at large, but is not the less valuable to this country on that account, since it is that which lays the groundwork of national and patriotic feeling all over the western land. It is a quiet-going immigration, so to speak, and makes little stir. It has headed the list until of late years, when the Galician immigration overtopped it, yet only for a time. In 1897 we received 2,373 Canadians from the various Eastern provinces, but the year just past has brought us 13,112, nearly as large a number as we received from all other countries put together.

As usual, our Canadian immigrants scattered over the whole country, obtained the best rates of transport they could and slipt into their places quietly and unobtrusively. They are the number one settlers of Western Canada, and form the large majority of the 25,000 farmers who export thirty million bushels of wheat, and who, if multiplied five-fold, would feed England. They opened the country and pioneered it, and their success is a matter of course, so that no one ever thinks of enquiring into the condition of a Canadian settlement. It is unnecessary to do more than to point to the statistics which follow of grain and cattle exports which are mainly their doing and are, year by year, the memorial of their indomitable perseverance and industry.

# Department of the Interior.

## DOMESTIC SERVANTS.

Immigrants of this class are highly necessary for the Canadian west, and as they are sought after also by other countries the competition is rather keen, free passages being given by some of these countries. Great Britain and Scandinavia furnish the best quality of girls, and the inducements to stay at home are so strong that their reluctance to leave can only be overcome by offering them superior inducements to emigrate.

## WINNIPEG IMMIGRATION HALL.

Under the careful supervision of Mr. Hislop, this building has been kept in thorough order and repair, and during the year over 2,000 English-speaking and 2,500 Galicians and other immigrants have received shelter within its walls. The term allowed to each is seven days, which is seldom exceeded. Blankets and mattresses have been supplied to the better class of immigrants, but increased accommodation in this way is desirable, and the appliances for cooking should be doubled. In other respects the conveniences for the personal use of the inmates are ample and satisfactory.

## IMMIGRATION HALLS ELSEWHERE.

The advisability of erecting temporary shelters of this nature is now under the consideration of the Department. Attention, however, is particularly drawn to the necessity for a hall at Edmonton, and another at Cardston in Southern Alberta, both being now urgently required. Some accommodation also is required at Medicine Hat. The old hall having been destroyed by fire, there is now no shelter whatever there for immigrant arrivals.

I might add the necessity of a hall at Rosthern or Hague, in which neighbourhood large settlements are now being formed.

## IMMIGRATION OFFICE.

This office is now in good working order, and every department of official duty has been well attended to.

Some convenience is lacking for the stowage of files and other accumulations, and for pamphlets, maps, etc., and the ventilation of the office is very defective, and, indeed, injurious to health. The office is simply a large room off the hall in which hundreds of immigrants are often accommodated at a time, just after a long trip in foul steerages and crowded cars. It is absolutely without ventilation excepting from draughts through windows; and whilst the immigrants in the hall are mere comers and goers, the officials in the office are permanent, and suffer from noises and impure air, which interfere with effective work. A separate office is urgently needed, adjoining the hall, furnished with the proper appliances for ventilation and free from the disturbances inseparable from the present state of things.

The office is visited daily by a large number of people whose enquiries extend over a wide field.

## COMPLAINTS.

The past year contrasts favourably with the preceding one on this score, the Galician and other colonists being generally pleased with their locations, and, excepting some difficulties at Dauphin, which were easily settled by Mr. Wood, there have been few complaints over non-payment of wages, disputed titles or defective entries for lands.

## QUARANTINE, HOSPITAL AND MEDICAL ATTENDANCE.

A vast amount of labour, trouble and personal risk was entailed upon the officials of this office during the outbreak of small-pox amongst the Galicians last summer, and



the establishment of the quarantines at this point. The management, treatment, etc., and other details of a medical nature touching this matter are freely dealt with in the reports to you of S. C. Corbett, M.D., and need not be enlarged upon here.

#### IMMIGRATION AGENTS IN WESTERN CANADA.

These have not been idle, but have done their duty very efficiently at this end of the line, showing delegations round their several districts, reporting upon the conditions of colonies and fulfilling a multitude of instructions with regard to matters arising daily in connection with immigration work.

#### TOWNSHIP REGISTERS

in which vacant lands are indicated, prove highly serviceable and the plans of Townships are also constantly referred to for indications as to quality of lands and distance from railways, so that the enquirer on the spot can obtain a tolerably fair idea of the value of a particular plot without actual inspection.

#### MAPS.

A good map of the Territories is in much request, and if separate maps of the Territorial districts could be obtained, they would be a decided convenience.

#### CORRESPONDENCE.

The number of letters received in the office during the past year is 12,638 and of letters despatched 9,699. Of this correspondence, received and sent, 19,003 were English letters, 1,953 Galician, 628 Scandinavian, 479 German and 274 French—a total correspondence of 22,337 during the year.

In addition, an immense number of pamphlets, maps, &c., has been mailed to applicants from all parts of the world. The replies to many letters received involve considerable research, containing as they do numberless queries with regard to the country, its resources, commodities and prices, and in the height of the season it is a formidable task for a limited staff, encumbered with other work, to handle this correspondence.

#### THE EMPLOYMENT BUREAU.

This institution, which I adjusted upon its present basis shortly after taking charge, has proved to be one of the most serviceable features of the office. During the past year 1,406 vacant situations were applied for and the applications for employment amounted to 1,154. The parties in demand are mainly farm labourers and domestic servants, and, in most cases, the applications were satisfactorily met owing to the influx of young men and Galician girls, the latter proving to be a useful class as domestics, being quick in perception and easily controlled.

To facilitate the objects of the Employment Bureau, some adjustment might be made by the Minister of Agriculture for Manitoba, whereby in the collection of statistics for the monthly bulletins issued by him *re* crops, livestock, etc., information might be added as to districts where labour is in demand, and where the market is overstocked. This to be forwarded, as received, to the Immigration Commissioner, who, so informed, could intelligently direct the immigrant to localities where he would find work.

Whilst taking little note of the innumerable details of office work and the task of management, involving constant energy, tact and vigilance on the part of officials all round, the foregoing report covers fairly the general field of immigration work and progress during the past year.

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## CROPS AND LIVE STOCK.

In the report of last year a statement was made that a survey of the general condition of business in the North-west afforded every reason for confident expectations of a remarkable development of its resources in the near future. This safe forecast has been verified and a general advance with some small exception has taken place during the past season along the whole line of production and export. The rise in the price of cereals, accompanied as it was by a corresponding advance in the price of cattle, has spread so large an amount of money amongst our farmers and ranchers that, as a rule, the majority of our older settlers are independent, and instead of sacrificing them, in order to meet their obligations as formerly, they are now able to hold their products until it suits their views and convenience to sell. No season, it may also be said, has ever exhibited so strikingly the recuperative forces of the soil and climate of Western Canada as the last, in which vegetation and harvesting were alike assailed, and, through adverse weather, were put to the severest test known for some years, yet when the weather at last cleared up in November and the stooks had a chance to dry, it was found that the hard wheat of this country had come through its severest trial with wonderfully little damage; that in the north-western districts being estimated at about 5 per cent, the south-western, north central and south central 10 per cent, the eastern from one to 33 per cent.

The provincial bulletin is a very trustworthy document; that is to say, it rather under than over-estimates the yield.

As regards shipments of wheat, only 60 per cent, so far as compared with last year's export, has gone, but it is known that the total yield is over 25,000,000, an increase of over 7,000,000 bushels. The area under crop was 167,350 acres more than last year, and the average yield has increased from 14·14 to 17·01 bushels per acre. The yield of oats was 17,308,252 bushels, an excess of 6,676,739 bushels as compared with the previous season, the average yield being also raised eleven bushels to the acre, and all other grains, including flax and potatoes and other roots, show a like advance.

The following table shows succinctly the area in crop:—

Acres of Wheat.	Acres of Oats.	Acres of Barley.	Potatoes.	Roots.
1,488,232	514,824	158,058	19,791	8,448

Yielding a total in grain, including the acreage under flax, rye and peas, of 47,345,664 bushels, and potatoes and roots of 5,724,753 bushels.

To this must be added the crop area of the Territories, but as there are no statistics with regard to this, it must be considered as an approximate estimate only. Mr. Thompson, the manager of the Ogilvie Milling Company, after careful inquiry, places the total yield of wheat there at 5,000,000 bushels, and as the average yield in the Territories may safely be placed at 20 bushels per acre, this would give 250,000 as the acreage to wheat alone, and the area under other crops will undoubtedly bear a like proportion.

## LIVE STOCK.

The export of cattle and horses shews a similar increase as compared with last year, but there is a considerable falling off in the shipment of hogs and sheep. The following table received from a C.P.R. official shews the total exports by the Canadian Pacific Railway for 1897 and 1898:—

## EXPORTS OF LIVE STOCK BY THE CANADIAN PACIFIC RAILWAY.

	Cattle.	Hogs.	Sheep.	Horses.
1897.....	42,995	6,667	9,542	338
1898. ....	50,369	7,316	4,300	542

About 10 per cent of the above went to British Columbia and the return shews a great increase over the exports previous to 1896. Mullins and Wilson, D. Macdonald & Company, and Gilchrist & Munroe are considerable shippers, but the largest are Messrs. Gordon and Ironside, who have exported this season 26,900 head of live-stock, and the following return is interesting as shewing the districts from which they draw their supplies :—

Cattle bought and shipped by Gordon & Ironside in 1898 :—

	Head of cattle.
From points between Winnipeg and Portage.....	600
“ “ Burnside to Qu'Appelle.....	2,600
“ “ McLean to Calgary.....	{ 2,700
“ “ McLeod & Lethbridge Branch.....	{ 3,500
“ “ Calgary & Edmonton Railway.....	5,600
“ “ Battleford District.....	400
“ “ Regina & Long Lake R.R.....	500
“ “ Great N. W. Central.....	2,000
“ “ “Soo” Branch.....	500
“ “ Winnipeg and Manitou.....	700
“ “ Pilot Mound & Napinka.....	300
“ “ Winnipeg to Estevan.....	900
“ “ Macdonald and Newdale.....	1,150
“ “ Shoal Lake and Yorkton.....	2,600
	2,850
	<hr/>
	26,900

Of the foregoing about 5,000 head were shipped south, the balance going east for export to the old country. Outside of cattle their exports do not amount to much. It will be observed that the largest supply was drawn from the Territories, where stock-raising is rapidly assuming immense proportions and where the boundless ranges for cattle promise an almost unlimited extension of the industry hereafter.

The shipment of horses shews an increase of 204 over the previous year, but this is equalized by an import of about the like number, so that this trade can scarcely be taken into account, so far as eastern demands are concerned. The real export of horses is from Alberta to British Columbia.

The falling off in hogs and sheep is noticeable, and a similar decrease in the sales of poultry indicates that less attention is being paid to these important branches than they deserve or than the true end to be reached here, namely, mixed farming, demands.

## DAIRY PRODUCE.

This industry is not as promising as the exceptional facilities for it in the North-West would lead us to expect. In a return received from Mr. C. C. Macdonald, the Dairy Superintendent for Manitoba, he says :—

“ The season has been a most favourable one for all parties engaged in the manufacture of cheese and butter. The industry, however, has had some difficulties to contend with. One of the chief ones was the policy pursued by the country merchants. In many places very high prices were paid for dairy butter; in trade some have been known to pay 16 cents and sell the same butter for 12 cents. This is a serious mistake on the part of the merchants, as it has a tendency to increase the output of dairy butter

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which is not wanted in large quantities. The prices this year have been exceptionally good. While it shows a decrease in the amount of creamery butter made, the price is such that it brings the value up to an increase over last year. The cheese output, so far as figures have come in, has decreased. Fully a million of dollars of farm produce will be brought into this country from other provinces, every dollar of which Manitoba farmers should produce.

The following is a summary of production and prices :—

Butter.	Pounds.	Price.	Value.
Creamery .....	965,024	18 $\frac{3}{8}$ c.	\$179,494.46
Dairy .....	1,151,620	13.94	160,593.98
Total .....	21,116,644		\$340,088.44
Cheese.			
Factory .....	800,084	8.67	\$ 69,367.28
Total value of dairy products .....			\$409,455.72

This falling off is to be regretted, yet there can be no doubt that the advantages which a great grass country like the North-West offers to dairymen cannot long be overlooked, and will in time assert themselves. It is the duty of all who have the interests of this country at heart, and particularly of the farming community who have them in their keeping, to urge at every point the development of mixed farming. It may be a slow, but it is a sure path to true independence and national wealth, and in view of the exhaustion which has befallen the old American wheat-growing States it might be questioned whether the owners of the soil are not its trustees as well, and in duty bound to return to it a fair proportion of the sustenance taken from it.

### CONCLUSION.

In conclusion I may state that all things point to a new era of progress. Our scheme of immigration has now developed into a system whose operations are similar to those of a well-contrived machine, and whose object is the introduction into Canada of approved agriculturists from the best countries to fill up the yet unoccupied lands of Western Canada, and to give openings to innumerable commercial, industrial and professional employments which without an increased agricultural population could have no existence.

I have the honour to be, Sir,

Your obedient servant,

W. F. McCREARY,  
*Commissioner of Immigration.*

## REPORT OF DOMINION HEALTH OFFICER AT WINNIPEG.

*(Appended to Commissioner McCreary's Report.)*

WINNIPEG, 25th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I beg to report, as follows, for the year ending 31st December, 1898 :

During the month of January I made thirty-two visits to the Immigration Hall, and prescribed for seven cases of scabies brought in from the country. I also treated in the fall seven cases of biliousness and six of influenza.

During the month of February I made thirty-three visits to the Hall and prescribed for three cases of scabies. I also prescribed for seven cases in Yorkton. I also attended to one case of inflammation of the eyes. There was one birth in the Hall during the month.

During the month of March I made thirty-one visits to the Hall and attended to two cases of scabies from the country ; one tumor on face ; two inflammation of the eyes ; two bilious fever ; one tonsilitis ; one scalp wound.

During the month of April I made forty-two visits to the Hall and attended to the following cases :—Four diarrhœa ; two bilious fever ; two ulcers ; one burn on leg ; one sciatica ; one influenza ; three chicken-pox ; four malarial fever ; one measles ; one birth in Shed, still-born ; one maternity case sent to hospital.

During the month of May I made fifty-six visits to the Hall and attended to the following cases :—Six measles ; seven influenza ; one fits ; two inflammation of the lungs, one died ; one neuralgia ; one chicken-pox ; two dysentery ; two bronchitis ; one malarial fever.

The following cases were sent to the hospital :—One diphtheria ; one chicken-pox ; seven measles ; one birth in Shed, afterwards sent to the hospital.

During the month of June I made sixty visits to the Hall, and attended to the following cases :—Four measles ; two diarrhœa ; two bilious fever. I sent two cases of measles, and one with a disease of the foot to the hospital for treatment. I had one suspicious case in the Shed and called Dr. Patterson in consultation to confirm my diagnosis.

During the month of July I made thirty-three visits to the Hall and attended to the following cases :—Two diarrhœa ; one measles. I sent four cases of measles to the hospital for treatment.

During the month of August, I made thirty-four visits to the Hall and attended to four cases of diarrhœa ; three of aphtha ; one quinsey ; two influenza. I sent one case of dropsy to the hospital.

During the month of September, I made forty-eight visits to the Hall and attended to two cases of influenza ; one bronchitis and one abscess.

During the month of October, made forty-eight visits to the Hall and attended to two cases of diarrhœa ; one of bilious fever and one of ophthalmia. I sent one case of typhoid fever to the hospital.

During the month of November, I made forty-seven visits to the Hall and attended to :—One case of congestion of the kidneys ; one malarial fever ; two scabies ; one abscess ; one entozoa ; one influenza ; two bilious fever ; one tonsilitis ; one bronchitis ; one pneumonia, age ten months, died.

During the month of December, I made forty-six visits to the Hall and attended to the following cases :—One bilious fever ; two influenza ; one malarial fever ; two rheumatism. One case of pneumonia sent to the hospital, died.

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I am pleased to report that the Hall has been wonderfully free from all infectious and contagious diseases during the past year.

On the whole the sanitary condition of the building has been fairly satisfactory.

The furnace in the west wing was completely burned out and had to be replaced by a new one as the old furnace filled the building with smoke.

I also suggested to Mr. Smith, Inspector for the Public Works Department, that some provision should be made for better ventilation.

On the 14th of June, I went east by train for the purpose of inspecting the "Pisa" immigrants, and on the following day on meeting the train, I discovered on the first section of said train two cases of small-pox and on the second section I discovered another, making in all three cases, besides twenty-two cases of measles and three of whooping cough.

I immediately wired the above information to the Commissioner, who made arrangements to have all on board of both sections of the train placed in Quarantine about one mile west of the Exhibition Grounds. The three cases of small-pox were placed in the Pest House and members of the two families were placed in the Suspect House, and those having measles were placed in tents by themselves, the balance in camps.

On the 19th June, I inspected about twenty-five immigrants on their arrival in the city, and found one case of measles and other suspects. All of the party were sent out to Quarantine.

On the 26th of June, I inspected the balance of the "Pisa" immigrants and discovered five cases of measles and other suspects, all of which were sent to Quarantine.

Dr. Ponton and Mr. Cameron, a medical student, were placed in charge, and I visited the different camps daily, spending from three to five hours in Quarantine each day. I made immediate arrangement on their arrival to have all those whom I did not consider immune against small-pox either by successful recent vaccination or by previously having had the disease, vaccinated.

Doctors Patterson and Jamieson very kindly assisted me in vaccinating 230, and on inspection, five days following, Dr. Patterson and myself found a very large percentage of the same were successful, notwithstanding the fact that they informed us that they had been vaccinated either on board of vessel or at the time they were in quarantine in Halifax.

I may here point out that we noticed many marks of recent attempts to vaccinate, but failed to find one successful case.

On the 26th of June Mr. Cameron and myself vaccinated thirty-four who had just arrived. A large percentage of the same took successfully.

Besides those already mentioned Dr. Ponton vaccinated the members of the two families having small-pox, and the members of those having measles, in all twenty-one cases, with the same results.

A fresh case of small-pox developed in one of the above families on the 28th of June, and two others have since developed, making in all six cases.

In addition to the above we had forty-two cases of measles, three of whooping cough, two of bronchitis and two of diarrhœa.

I regret to have to report the following deaths:—

One little child under one year of age died in quarantine from small-pox, three from measles, two bronchitis and two diarrhœa. With the exception of one child who died of measles, all others were delicate, anæmic and debilitated before their arrival here.

Dr. Patterson, Provincial Health Officer, and Dr. Inglis, City Health Officer, gave me valuable assistance during the full time of quarantine; besides seeing the cases of small-pox, confirming the diagnosis and approving of the manner in which the quarantine was conducted, they assisted me in disinfecting the baggage. As each batch of immigrants were released from quarantine every individual was bathed in a solution of corrosive-sublimite and their baggage carefully sprayed with the same solution or with formalin.

We had rain nearly every day during the time they were in quarantine, which added to the difficulty and work of the attending staff.

On the 10th of July, on the arrival of a large number of immigrants, I discovered two cases of small-pox, and other suspects, besides a large number of cases of measles.

I had the two cases of small-pox removed from the train, and placed in the small-pox Hospital at Quarantine No. 1, and the Commissioner decided that owing to the Exhibition being held in the city at the same time, it would be safer to the public to establish a second quarantine at some distance from the city; in consequence of which the train containing the immigrants was ordered out to a siding near Stony Mountain, and on the following day, a second quarantine was established some little distance south of the penitentiary.

On the 12th of July I found the three cases which I was suspicious of fully developed into small-pox, and I immediately placed them in an isolated camp at some distance from the other camps, and at the same time I had it enclosed by a fence. I then isolated all those suffering from measles.

The same date I vaccinated two hundred and thirty-five, all those whom I did not consider immune, Drs. Patterson, Inglis and Watt assisting me. About thirty per cent of those vaccinated took successfully. Dr. Watt was then placed in charge of Quarantine No. 2.

On the 14th day of July, a fresh case of small-pox developed, which we placed in the Quarantine Hospital, and on the 16th, we discovered two cases of chicken-pox, both of which we isolated.

We commenced to discharge from Quarantine No. 2 on Saturday the 30th of July, and closed the same on the following Tuesday.

The small-pox patients were removed to Quarantine No. 1, and placed in charge of Dr. Wilson.

Before breaking up camp, every person was obliged to take a bath, and have all their clothing soaked in a strong solution of corrosive-sublimate, and their baggage sprayed.

You will notice that only one fresh case of small-pox developed during the time they were in quarantine, and the case appeared just four days after their arrival in the city, and was contracted on the way, and not in quarantine.

On the 17th, I inspected ninety immigrants on their arrival in the City, and found one case of measles, which I sent to the hospital.

On the 20th, I inspected a carload of immigrants on their arrival, and found one case of measles, which I sent to the hospital.

Nine deaths took place in Quarantine No. 1. Six deaths took place in Quarantine No. 2.

I may explain that the majority of children who died in quarantine were constitutionally weak and diseased before leaving their native home.

I am, Sir,

Your obedient servant,

S. C. CORBETT.

## Department of the Interior.

### REPORT OF MR. W. LANGMUIR WATT, ON SETTLEMENT OF VACANT LANDS NEAR WINNIPEG.

(Appended to Commissioner McCreary's Report.)

WINNIPEG, MAN., 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—In the early part of the past summer a Committee composed of members of the City Council of Winnipeg, the Winnipeg Board of Trade and the Winnipeg Retailers Association was formed for the purpose of devising ways and means of settling the vacant land in the vicinity of the city of Winnipeg.

After thoroughly discussing the question, they decided to issue a pamphlet on the district, and to correspond with the Department of the Interior, with a view to obtaining assistance by employing the machinery of the immigration branch in directing the attention of incoming settlers to the district, and to appoint a clerk and land guide in this city to take charge of this special work.

The matter was favourably considered and the request agreed to.

On this being settled satisfactorily, the committee approached me to see if I would take hold of the work, knowing that for many years past I had been dealing largely in the lands of this district, and was well acquainted with the principal land owners, and promising me their unqualified support and recommendation to obtain the proposed appointment.

After due consideration I agreed to accept the position and resigned an important audit which I was working on for the Provincial Government, and took the work of the settlement of the Winnipeg Vacant Lands in hand and commenced work about the first of July last.

After getting the printers at work on the necessary forms, register and index, I applied to the treasurers of the various municipalities in the district for a list of all the non-resident land owners in their municipalities, with whom I opened communication, sending out about twelve hundred circulars and forms, requesting them to register their lands with me, together with as full a description as possible and give their price and the terms on which they would sell. As these lists were returned to me, I registered the lands and soon had some 1,380 parcels on the list.

On the 10th of September last, I removed my register and papers to the Commissioner's Office, and continued the work, registering all lands returned to me for sale in the province and have now some twenty-six hundred parcels on the register. With the consent of your Department I obtained a map on a large scale of the province, on which I am plotting out all the lands offered for sale so that it can be seen at a glance where and what lands can be purchased.

The work so far has been more the compilation of the list of the lands for sale, but as the knowledge of this work of the Immigration Department becomes known I find it is being largely taken advantage of, as letters are received from all parts of the Dominion, from Quebec in the east, to British Columbia in the west, from a number of places in the States and one or two from England, asking for pamphlets, maps and general information about the lands of the district, all of which have been promptly replied to.

The claims of the district have been brought to the notice of many of the delegates from the States visiting the province, a number being driven out and shown a part of



the district, several of whom were highly pleased and purchased land for themselves, promising to report favourably to their friends on their return home.

As this Department is not conducting a real estate business, it has not been my object to close sales direct with the owners, and so far I have only completed two sales, but have used every effort possible to favourably influence prospective settlers to locate in the district, leaving the real estate agents to make the sales, which has been done in many cases. In looking over my register I find forty-eight parcels have been returned to me as sold, and have written them off the register. I think this is a fair showing, considering the short time this work has been in operation. The land owners highly appreciate the action of the Government in establishing this branch of the Immigration Department here, and I have every day a number of personal enquiries for the lands of the district and many express their pleasure and satisfaction in being able to obtain reliable information and advice as to the lands offered for sale in the district without having to go the rounds of all the real estate agents in the city, and express their surprise that the establishment of this branch is not made better known, especially in the Northern States, where many are looking with longing eyes to the fair prairies of Manitoba, and who would willingly pay five or six dollars an acre for many of our vacant lands.

From the general trend of the conversations with the numerous delegates and settlers, I am led to believe and expect to see a large influx of settlers from the States to this district during next season, and if facilities are afforded to bring the work of this particular branch of this Department to the notice of intending immigrants a fair proportion can be secured for the Winnipeg district.

I would take the liberty of suggesting a few things which would facilitate and are necessary for the successful carrying on of the work. For example, some advertising by local or standing advertisements in Canadian newspapers, requesting owners desirous of selling to register their lands, and in Canadian and United States papers notice to intending emigrants to write or personally apply for pamphlets, maps and lists of lands for sale to the Immigration Commissioner here; and the printing from time to time of corrected lists of the lands for sale, for general distribution. Other things I would like to recommend are (1) that when prospective settlers arrive here, guides and transportation to inspect the lands should be provided. (2) That we open communication with the Provincial Government with a view to obtaining legislation to compel the municipalities to build good leading roads into the city, or better still, for the Government to build and maintain all leading roads and charge proportion of the cost and maintenance to the different municipalities. (3) That an effort be made to induce the Provincial Government to enact more rigid legislation for the destruction of noxious weeds. At present the municipalities appoint the inspectors from among themselves and they may cut down the weeds on non-resident lands when their neighbour's miscultivated field may be a perfect hot-bed of noxious weeds, poisoning the country for miles around, and yet he is allowed to harvest his crop of grain and weeds with little or no attempt at their destruction. The inspectors should notify owners to destroy noxious weeds within a given time and failing attention to same, should have power to proceed to cut, plough under, summer-fallow or by any other means destroy all noxious weeds, whether the land is under cultivation, crop or otherwise, the expense incurred to become a first charge on the lands.

Another most important matter is efficient drainage. At present a municipality may construct drains which have no proper outlet, and which may benefit some of their land but often simply convey the water on to, and flood, lands in an adjoining municipality. The Provincial Government should take charge of all leading drains and see that they lead to a proper outlet, and are kept in good working order, charging lands benefitted with the original cost of construction.

The parish lots which form a considerable portion of the district consist of narrow lots of a few chains wide and extending back about four miles. They are largely held and occupied by Half-breeds, and in many cases, the portions cultivated are overrun with noxious weeds. The present system of survey varies somewhat from the parish system, and it may be a matter of some difficulty to arrive at a common basis for settle-

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ment of the lands. The river lots immediately to the South of the city require an efficient system of drainage to make them fit for settlement.

There is also a considerable tract of alkaline lands to the north of the city which require better drainage before they can be successfully cultivated.

If the river lots and alkaline lands adjacent to the city were drained and cut up into small holdings, say, forty acres, they might be settled with some of the foreign element who would be willing to expend considerable labour in bringing them under cultivation for the sake of being near the city, provided the land was sold at reasonable prices and on easy terms of payment.

In conclusion I might say that the vacant lands committee have issued thirty-five thousand pamphlets relating to the Winnipeg district, twenty-five thousand in English, five thousand in German and five thousand in Scandinavian, which are being distributed and should help to bring the claims of the district favourably before the public. They are now going to furnish me with five thousand maps drawn on a large scale, taking in some nine townships, on which the lands for sale will be plotted out in red and on the back will be printed a list of the lands with the prices asked and a short general description of the district. This will be got up as a folder and be most convenient for distribution to intending settlers.

I am, Sir,

Your obedient servant,

W. LANGMUIR WATT.

## No. 2.

## REPORT OF MR. J. M. McGOVERN, TRAVELLING IMMIGRATION AGENT.

WINNIPEG, 9th January, 1899.

W. F. McCREARY, Esq.,  
Commissioner of Immigration,  
Winnipeg.

SIR,—I beg to submit the following report for the past year, and as the greater part of the duties have been of a general routine order which have been fully explained in previous reports, it will only be necessary to briefly explain the same and make some references to the general immigration work, class of arrivals, etc., to which my attention has been directed during the year.

During the month of January, I was attending to the duties from Port Arthur where I had been stationed since 1884, going east from there each day to meet the west-bound trains and travelling with them from Schreiber to Fort William, a distance of one hundred and twenty-six miles. Careful attention was given to all immigrants and intending settlers, and a report giving names, occupation, nationality and destination of all such passengers duly forwarded by each train to your office.

On the 1st of February, there was a change of time-table on the railway, which caused the trains to arrive at Port Arthur about one o'clock in the morning, making it impossible to do the work from that point, and I went to Chapeau, which is three hundred and seventy-seven miles east of Port Arthur. After remaining three weeks, I received instructions to come to Winnipeg and arrived here on February 16th.

The duties here being practically the same as at Port Arthur, necessitated my going east as far as possible each day to meet all passenger trains and return with them to Winnipeg. The travel, as you are aware, was unusually heavy, particularly during the spring and summer, three and four trains a day being a common occurrence. To check those carefully and give immigrant passengers the information and attention required, frequently caused very long hours on duty, which, as I am well aware, has been the experience of yourself and other members of the staff during the past busy season.

The system of checking trains before their arrival in Winnipeg and travelling as far as possible with the immigrants has proved to be most beneficial, and it is certainly the best, if not the only, method by which reliable statistical returns of the number, nationality, destination, etc., of arrivals can be obtained, as all through passengers are questioned, and only those who state distinctly that they intend remaining in the Western Provinces are recorded.

The names of all such are taken, and it is possible, to a great extent, to verify the correctness of the report at any time. What is still more important is that checking the trains as stated, enables the agent to become acquainted with the incoming immigrants and give them all the attention and advice they may require. Those destined for Winnipeg, the great distributing point, are fully informed of the benefit to be derived by obtaining information and direction at your office; also the arrangements made here for the comfort and welfare of those desiring same, time of departure of branch line trains, etc, etc., all of which is fully appreciated by the people, and prevents annoyance and confusion on their arrival. Those going through to the Territories and British Columbia are instructed about changing cars, different routes to be taken, time of arrival at destination, and when possible, given the name of an agent to whom they can apply on arrival. There were also numerous cases of delayed or lost baggage, misunderstanding about tickets, and the many other incidents that are common with a large immigrant travel, all of which received prompt attention.

It is frequently an unpleasant duty to question all passengers, many of whom are ordinary travellers, but the attention required by the new arrivals, even those coming

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from the older provinces and the facts as above stated, prove that it is the most systematic way of obtaining reliable information and arranging to properly attend to the wants of all immigrant passengers.

The large increase in the number of arrivals during the past year must be very gratifying, not only to those engaged in immigration work, but to all Canadians who cannot fail to realize the importance of the rapid settlement and development of our Western Provinces, and proves most conclusively that a liberal expenditure on business methods is certain to produce the best results. I can state, judging from conversation with a very considerable number of the new arrivals and parties of visiting delegates, that very successful efforts have been made, particularly in the United States, to secure the best class of settlers, and it is evident from the opinions expressed that the Western part of the Dominion is better and more favourably known than ever before, which must result in a decided yearly increase in the number of immigrant arrivals.

Another matter to which I may be permitted to refer is the good attention given to the people after their arrival; and I deem it proper to state that I have frequently heard the most favourable comments upon the energetic manner in which you have conducted this most important part of the work. I have reason to know from the experience of the past sixteen years how important it is that an immigrant's first impressions should be favourable ones, as his success or failure is generally decided within the first year. The contented settler is always a good immigration agent, as he invariably endeavours to induce his friends to join him, and it is pleasing to note that the special efforts made during the past year to energetically and systematically conduct all branches of the work in the Western Provinces must give general satisfaction and prove an important factor in securing a larger immigration in the future.

I have probably had a better opportunity than any other individual officer of judging of the class of people that are coming to this country, as, with the exception of the large parties of Galicians, practically all the arrivals by the C. P. R., those en route to western points as well as those coming to Winnipeg, came under my inspection and attention when checking the trains, and I am pleased to state that they were a most desirable class of settlers. A noticeable feature was the unusually large number who expressed the intention of purchasing land, and the returns giving the amount so invested must plainly show that the amount of capital brought into the country was far greater than for any preceding year. Some adverse criticisms were made about the Galicians, evidently caused, to a great extent, by their peculiar dress, but they appeared to be a hardy, economical class of people who, when given a reasonable time, should prove to be successful farmers. The younger generation, the proportion as you are aware being unusually large, seem to be bright and intelligent and should quickly adapt themselves to the ways and customs of the country.

None of the large number of harvest excursionists from the Eastern Provinces who held return tickets were included in the reports of arrivals, but a very considerable number of them remained in the West, as I have ascertained from their families when coming to join them; consequently it may be correctly stated that there has been a greater number of settlers from the older provinces than is shewn in the returns.

The number and nationality of arrivals, with special reference to each, will undoubtedly be shewn in the reports from the different officers of your staff, and it will not be necessary for me to give any statement or figures in connection with the same.

With the exception of the large parties of Galicians who did not come under my inspection, being, as you are aware, in charge of special interpreters, and who were so unfortunate as to have an outbreak of small-pox among them, the general health of all arrivals was exceptionally good, as there was very little, if any, indication of serious illness and no case of contagious disease on the trains.

In conclusion, I desire to express my sincere thanks to the C. P. R. officials and trainmen, who have been most courteous and obliging, particularly the conductors, to whom I am indebted for very material assistance when checking the trains.

I am, Sir,

Your obedient servant,

J. M. MCGOVERN.

## No. 3.

## REPORT OF J. W. WENDELBO, SCANDINAVIAN OFFICER.

WINNIPEG, MAN., 4th January, 1899.

W. F. McCREARY, Esq.,  
 Dominion Government Immigration Commissioner,  
 Winnipeg, Man.

SIR,—I beg to report to you that, in accordance with instructions from head office, I started on the 10th day of January, 1898, to report to Mr. B. Davies, 154 East Third Street, St. Paul, Minnesota, in order to assist him with immigration work in his district, during a portion of the winter season. I reported at his office on the following day, when I examined and replied to a number of letters in the Scandinavian language, and by his directions on the 13th of January proceeded to visit a number of localities in Southern Minnesota and Northern Iowa, travelling from point to point, by railway or by team, personally conversing with a number of people, with whom Mr. Davies' office had been in correspondence, together with a large number of other people, creating considerable interest in our Canadian North-West; but the season being winter and heavy snow having fallen through the North West it was an unsuitable time to advise people to visit the country at once, and I fear that later in the spring, when the season became more suitable, the rumour of the then approaching American Spanish war, had a great deal to do with turning their attention in other directions. Consequently my trip does not show as satisfactory results as I anticipated and hoped for. I forwarded, however, to the head office at Ottawa, a considerable list of names and addresses of persons whom I found very much interested in information about our Canadian North-West, and who, in most cases, declared their intention, in the near future, to come and see for themselves what the country offered. I attach hereto a list of a few names of those I visited and who have since visited this country, where they have either permanently settled already or declared their intention to return later on to do so.

F. W. Harmus, Austin, Minn.  
 John Bennett, do  
 John Johnson, do  
 Maley Anker, do  
 D. Dexter, Ventura, Iowa.  
 F. A. Peterson, Albert Lea, Minn.  
 John Heale, do  
 Chris Larson, Alden, Minn.  
 Peter Larson, do  
 Frank Klyff, Bruce, S. D.  
 Mrs. Anna Klyff, Bruce, S. D.  
 E. W. Ackexman, Arlington, S. D. Delegate.  
 Ole Kjorlie and family, Kila, S. D.  
 Ole Rogen, Baltic, S. D.  
 Ole Tweedt, do

I returned to Winnipeg on the 1st day of April, taking up my duties in your office as interpreter and Scandinavian correspondent, and when in the city meeting all in-coming trains, and in some cases proceeded east to take the names of the immigrants arriving; assisting immigrants of various nationalities when an opportunity for doing so was afforded. During the unfortunate period of the smallpox quarantine for some

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six weeks my time was very much taken up in arranging for the supplies for those people.

During May I visited the Galician Colony at Stuartburn, inspecting the delivery of seed potatoes. In August and September I made three trips to Foxton district, acting as guide to Scandinavians settling in Townships 16 and 17, Ranges 1 and 2 east, forming a settlement of 12 Scandinavian families who for some time have been residing in Winnipeg, whose homes here they are now pleased to exchange for farms.

I made one trip through a portion of Manitoba and Assiniboia accompanying one C. N. Hanson, a delegate from Manistee, Wisconsin, who represented a number of Scandinavians in that place.

It has been customary at the close of each season to report separately on the number and class of Scandinavian immigrants arriving in this country, and I beg to state that with few exceptions the 532 Scandinavian immigrants recorded in this office as having passed through Winnipeg to settle in the Canadian North-West have been of a most desirable class. In fact very few artisans from the Scandinavian countries have made application for employment, nearly all taking the first possible opportunity to settle on land, and the land agents' returns show that 140 Scandinavian and 12 Finnish families have made homestead entries during the year. I also notice that out of the entries made by people who have settled in the Lethbridge district, at least thirty names appear to be Scandinavian, although they have all been recorded in the agent's returns as Americans.

I beg to mention that I am in receipt of a communication from one M. Anderson, informing me that some 20 Norwegian families have settled in Townships 1 and 2, Range 11 east, comprising about 50 souls. As, however, the land has not yet been surveyed, no homestead entries have been made by these people.

I also beg to mention that the Carberry, Deloraine and Morris Districts have this season been augmented by a considerable increase of the Scandinavian population, who have purchased land in these districts, the English-speaking Scandinavians generally preferring to settle in Canadian settlements, where they are very much appreciated. The season's land transactions with the Scandinavian people are in my opinion very satisfactory.

I regret to say that, with the exception of a little settlement of somewhat recent establishment, near Percival on the C. P. Railway, I have had no opportunity to visit any of the Scandinavian settlements during this and former seasons and am therefore unable to give you any definite statement as to the progress of these people. I am aware that in some few districts the crops have not been as plentiful as might have been desired, but I understand the people generally are well satisfied with their condition. There are, however, some complaints, such as want of railway communication in some neighbourhoods. I may say that New Stockholm has long been complaining that the Great North-West Central Railway is not being extended through that colony. Likewise New Denmark, 25 miles northwest of Yorkton, where for a number of years the people have been expecting the Manitoba North-western. The Alberta Scandinavian settlers are evidently well satisfied with their prospects for the future.

Before completing my report I beg leave to express the opinion that energetic efforts to procure Scandinavian immigrants should be inaugurated in Scandinavia. The domestic help which formerly came to Canada in considerable numbers from Scandinavian countries, has this year almost entirely ceased, and the actual cause of this I am unable to explain, except that those who would willingly come here, are generally short of the necessary amount for transportation; and unless assisted in some way by friends in this country or others to pay their transportation expenses, I fear that the immigration of that class of people will not readily improve. Respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

JOHN W. WENDELBO,  
*Scandinavian Immigration Officer.*

## No. 4.

## REPORT OF LEON ROY, FRENCH INTERPRETER.

WINNIPEG, MAN., 6th January, 1899.

W. F. MCCREARY, Esq.,  
Commissioner of Immigration,  
Winnipeg, Man.

SIR,—I have the honour to submit my report for the year ending December 31st, 1898.

I am pleased to be able to report satisfactory progress being made by mostly all the French-speaking settlements in Manitoba and the Territories, and that a marked improvement is noticeable in small towns. New churches, schools, creameries, cheese factories, grain elevators, stores, blacksmith shops, etc., are being erected in many places. During the summer several French-Canadian delegates from the United States travelled over the country in quest of land, a good many bought land and very encouraging assurances of future immigration come from Michigan, North and South Dakota, Minnesota and Wisconsin. Three hundred and sixty-eight French and Belgian immigrants came under my special care during the year. The number of French-Canadians from the Eastern Provinces, and repatriated from the United States, was 981, or 50 per cent better than last year. In addition to this a considerable number have entered Canadian territory with teams, from Minnesota, Dakota, Montana and Wisconsin.

My work this season has been, when in Winnipeg, attending the arrival of trains, receiving arrivals and otherwise rendering all possible assistance to them. I have also assisted in locating settlers at Fish Creek and Rosthern (Sask.), Pleasant Home, Stuartburn, and in the inspecting of timber land and guiding intending purchasers in the Winnipeg vacant land district.

I have the honour to be, Sir,

Your obedient servant,

LEON ROY.

# Department of the Interior.

No. 5.

## REPORT OF C. A. JONES, GERMAN INTERPRETER.

WINNIPEG, MAN., 6th January, 1899.

W. F. MCCREARY, Esq.,  
Commissioner of Immigration,  
Winnipeg, Man.

SIR,—I have the honour to submit my report on German immigration for the year ending 31st December, 1898.

The total number of German-speaking immigrants from Europe amounted to 998 souls ; 123 from Germany, 645 from Austria, and 230 from Russia.

The movement of Germans from the United States bids fair to largely increase next spring, as from the number of Mennonite and German delegates who visited the North-West this past season, and made very satisfactory reports, the best results are inevitable.

The Hutterische Society, similar in belief to the Mennonites (the chief difference in their belief being that they are a religious commonwealth), of South Dakota, five delegates of whom visited the North-West last summer, are also much interested in the Saskatchewan district, and a branch colony is likely to be started the coming season.

The above mentioned 998 souls have settled in Manitoba and the North-West, the bulk of them having taken up land. Few of this number are farm labourers, and a very small percentage have settled in towns ; in fact, the chief aim of these people is to settle on land, and those who, owing to want of means, remain in towns, only do so until they have made sufficient to start with.

Neudorf, Qu'Appelle, Balgonie, Ebenezer, Josephsburg, Wetaskiwin and Edmonton seem to be the favourite points, Edmonton in particular, drawing the bulk of the Russian-German influx.

From short visits made by me to Neudorf, Rosthern, Edmonton and the Hungarian Colonies this year, I am able to report very satisfactory conditions. These settlements certainly show signs of prosperity.

Messrs Peter Krhan and Peter Brown, two Mennonite delegates from South Russia, visited the Rosthern and Prince Albert districts in the North-West last spring, and have since returned to Russia, where they are now working among the fraternity in the interests of immigration. This will, no doubt, have a very great effect upon immigration from that quarter, as until now, the people of Russia have only had the letters of friends in this country to depend on.

Besides attending trains and rendering assistance to all immigrants, I have had a large amount of correspondence and translations to attend to.

The inquiries for information and pamphlets, from all quarters, and applications for assistance in obtaining work, through the labour register, are increasing enormously.

I have the honour to be, Sir,

Your obedient servant,

CHARLES A. JONES,  
*German Immigration Officer.*



## No. 6.

## REPORT OF CYRIL GENIK, GALICIAN INTERPRETER.

W. F. McCREARY, Esq.,  
Commissioner of Immigration,  
Winnipeg.

WINNIPEG, 9th January, 1899.

SIR,—I have the honour to submit to you report of Galician immigration for 1898, commonly called Austrian immigration.

These immigrants come out of two provinces in Austria, *i.e.*, Galicia and Buckowina and they are composed of Slavs; they have a slight difference in their religious beliefs, namely, those from Galicia follow the tenets of the Roman-Greek Church, whilst those coming from Buckowina belong to the Greek Orthodox faith.

During the season some 4,400 souls have arrived out of these two provinces, who, as you will see from the itemized returns below, have, with the exception of 152 souls who remained in Winnipeg, settled on land in the various colonies, or joined their friends.

	DISTRIBUTION.	Males.	Females.
Edmonton . . . . .		705	642
Dauphin . . . . .		302	250
Stuartburn . . . . .		215	194
Yorkton . . . . .		272	256
Brokenhead . . . . .		75	60
Pleasant Home . . . . .		320	285
Winnipeg . . . . .		102	50
Sifton . . . . .		52	55
Whitewood . . . . .		9	11
Grenfell . . . . .		24	19
Saltcoats . . . . .		24	26
Huns Valley . . . . .		27	26
St. Norbert . . . . .		9	8
Cook's Creek . . . . .		4	4
Total . . . . .			4,436

These immigrants all belong to the farming classes, and they all look to take up land. They have nearly all found friends in the various colonies, whom they have joined; those who have means, at once taking up land and making their own home, the poorer men obtaining work during the summer months, either with farmers or on the railway at section work.

I have met nearly all trains of these immigrants, going as far east as Montreal to meet them, and have accompanied them to Winnipeg, giving them necessary instructions and information regarding the various settlements, and obtaining particulars and statistical reports for the Department. I have not been able, owing to pressure of office work, to visit their colonies, but from all accounts these people are making good progress on their land.

The tremendous numbers of Galician letters received by this office, speak for themselves. I have received personally 1,003 letters and have replied to every one of them. I have made entry for nearly all settlers in the Pleasant Home and Stuartburn Colonies, thereby saving them the expense of coming to Winnipeg; receiving entry fees and writing to each man when inclosing homestead receipts.

Besides the above duties I have daily had occasion to place Galician servant girls, for whom the demand has been steadily increasing, so that I am often unable to furnish applicants with help. This applies also to boys and farm labourers looking for work. Over 230 such have been placed.

Besides office work, I have daily met trains and made myself generally useful to incoming immigrants.

This I respectfully beg to submit.

I have the honour to be, Sir, Your obedient servant,

CYRIL GENIK, *Galician Interpreter.*

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### No. 7.

#### REPORT OF C. W. SPEERS, GENERAL COLONIZATION AGENT.

WINNIPEG, 9th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you the following report of my work in Western Canada and the United States in the interests of the immigration branch of your Department during the past year.

In compliance with instructions from you I proceeded to Omaha, Nebraska, in January, 1898, and worked in conjunction with Mr. W. V. Bennett through Nebraska and Iowa, visiting a great many portions of these States as well as holding some public meetings in the interests of Canadian immigration.

The assurances we received were very gratifying, that a large number would come to Canada as a result of our work, and that our labours were conducive of good results I can safely assert from the fact that before the 1st of May, 1898, Mr. Bennett had booked and given settlers' certificates to no less than 213 persons, and doubtless subsequent to that date the work has been going on satisfactorily.

Returning to Canada about the last of March I accompanied a large delegation from Kansas, Iowa and Dakota consisting of fourteen gentlemen, to the Edmonton district, calling at Brandon and other places of interest.

In addition to this I was enabled to meet some Kansas and Nebraska men in the Edmonton district, who are now thrifty settlers as a result of our work.

Again on the 20th of the same month I accompanied a large delegation consisting of 21 Americans from Kansas, Nebraska, Michigan, Wisconsin and South Dakota, showing them all the features of interest, the great production and grand possibilities of our country. They were all delighted, and I took a very comprehensive report from them.

Our country was a revelation to these delegates; rich, fertile and productive, the cost of necessaries and commodities cheaper than they expected to find, social conditions all that could be desired in any country, the climate more moderate in the winter and more pleasant in the summer, than they had expected, in fact everything has been highly satisfactory to the different American delegations, coming as advance guards of colonies, to come, we trust, in the near future from their respective districts.

Proceeding about the 1st of May, to Saskatoon, on the Prince Albert branch, east side of the Saskatchewan River, to look over a large tract of country that would be suitable to locate and colonize Galicians, I selected Townships 41 and 42, in Ranges 1 and 2, West of 3 P. M. I found there a beautiful country, specially adapted for Galician colonization, the soil excellent, district well watered and timbered, and the entire region park like, with clear prairie to the base of the timber.

Meeting the Galicians at Fort William, on the 15th of May, 1898, I proceeded forthwith to the chosen district in Saskatchewan with about 50 families. This colony was supplemented by about 40 families on the 8th of June, 1898. I may here add that a large settlement of progressive Galicians are permanently established in this colony.

On the 16th of June I accompanied J. H. Pettifer, representative of the United Empire Trade League, showing him many features of interest, and proceeded to Duck Lake, where the final settlement of the new colony was effected.

I accompanied several delegates of Americans to Prince Albert, and did some immigration work at the Winnipeg Industrial Exhibition in connection with Mr. McKellar,

of the Provincial Government. Nine thousand Americans attended on American day, and our literature was well distributed.

I was also in attendance at Brandon Fair, where a number of American delegates were present. I accompanied them to Prince Albert. Mr. T. O. Davis rendered useful assistance in forwarding them to Stony Creek, and Carrot River country.

Subsequently I made a tour of inspection over some of the colonies, urging the new comers to get out and earn money, having secured work for them through Mr. Supt. C. W. Milestone, on the railway, and was pleased to find them in a very satisfactory condition, with every evidence of thrift and prosperity.

In compliance with further instructions from Ottawa to proceed to the United States and attend State fairs, I left Winnipeg for St. Paul about 1st September, 1898, remaining at the Minnesota State fair at Hannline Park about 8 days; proceeding from there to the Southern Minnesota State fair at Rochester, and from there to Chippawa Fall, Wisconsin, and thence to Milwaukee, State fair of Wisconsin. From there I went to Springfield, State fair of Illinois; thence to Ft. Wayne, State fair in Indiana, and from there to Terre Haute, in Indiana, Southern State fair.

I may say that the greatest possible success attended our efforts in the display of our products at the above mentioned places, ably assisted and advised by Mr. W. J. White, of the Department. There was not a hitch in all the proceedings. The different State Agents were deeply interested and attentive and did good work; every exhibit put up was a credit to Canada and all were artistically arranged and looked beautiful. The grains were of excellent quality, well selected, and reflected credit on the managers of the different Experimental Farms and the Agricultural Department of the province of Manitoba. Our immigration literature was eagerly sought for and as many as 1,500 names were registered at some of the fairs, of persons interested in our country, many of whom will come to Canada. Many thousands of people saw our products at these fairs, and our display evoked complimentary remarks continually. We had many newspaper encomiums, and in several places we received diplomas for the best exhibit of natural products ever shown in the State.

This display of the products of Western Canada has done more to advertise our country than anything hitherto done by the Department, and as a result hundreds have signified their intention of coming to Canada. This form of advertising will be a great help to our agents in the different States, as it has opened up work for them and brought a great deal to the surface.

Returning to Canada the latter part of October, 1898, I received notice that I had been appointed General Colonization Agent of the Dominion Government.

In compliance with Departmental instructions I proceeded to inspect the "Rainy River" colony established by the Rev. Mr. Burns, near "Eno." I was highly pleased with that good country. It is well timbered, has a rich clay, loam soil, and is well watered, the streams having good deep beds, affording excellent drainage, and for many miles along that beautiful river, and stretching back from it is a country rich in agricultural wealth awaiting development, possessing every natural advantage to make prosperous and happy homes for many people.

The settlers I met were first-class; strong, young and hopeful, and were clearing their land with a will.

Proceeding to inspect the Galician Colony at Fish Creek, I found these people had made as much progress as any nationality could be expected to do in the time. I found that the men had been employed on the Regina and Long Lake Railway and on the Moose Jaw Division of the C. P. R., at section work, and in gravel pits, and they have given excellent satisfaction to Mr. C. W. Milestone, superintendent, and his road masters. I also found that the Galician girls doing domestic work, had given entire satisfaction to many who had employed them and I received the highest testimony of their worth from many.

In addition to these people being industrious and frugal, they have made themselves very comfortable on their homesteads, and they are very acceptable to the other nationalities settled around them, and it is generally conceded that they will make useful settlers. Accompanying my report on this matter were letters from railway officials and others testifying to the worth of these people as labourers and settlers. I wish also to add

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that the North-west Government has acted generously and promptly in doing anything I requested, such as placing a new ferry on the Saskatchewan River for these people, also boring wells with the Government machine. I also received great assistance from Commissioner Herchmer, of the N. W. M. P., and his officers were always courteous and attentive and gave good assistance in effecting the successful settlement of these people. My next work was to inspect the different colonies settled in Northern Alberta; the Russian Moravian colonies at Bruderheim and Bruderfeldt; the large Galician Colony at "Edna," comprising 360 families; the Austrian-German Colony at Josephburg; the Russian-German Colony and the Galician Colony at Rabbit Hills; and the Swedish Colony at Wetaskiwin. All of them are making marked progress.

The Galician Colonies have two large churches and two public schools with a large average attendance of Galician children acquiring our language very fast. They are quickly adapting themselves to our customs and usages. The evident desire and intention of these people to become identified with our citizenship, and the great amount of grain and stock they are producing, must be very gratifying to the Department. Their industry, frugality and thrift have dissipated the opposition in that district that many had at the time of the advent of the Galicians. No class of people of any nationality ever made greater progress than these people have done in so short a time. Many of them had 1,500 bushels of wheat in their granaries and from 300 to 400 bushels of potatoes in their cellars, from this year's crops, as well as 15 to 20 head of cattle, and a very complete agricultural equipment.

The production of that country in grain and stock will soon warrant railway construction, as it is one grand fertile belt of rich country, every acre good. That road when built from Yorkton or other point on the M. and N. W. R. running in a North-westerly direction, by Beaver Hills and Stony Creek district to Prince Albert, thence in a Southwesterly direction to Battleford along the Battle River to Edmonton would pass through, along its entire length, one grand belt of agricultural land, possessing every natural advantage.

I next visited the different colonies north of the Main line of C.P.R. and of White-wood and Broadview, consisting of the Hungarian Colony of St. Luke, about 100 families; the New Finland Colony of about 30 families, the Hungarian Colony at Esterhaz and Kaposvar, and the Swedish Colony of New Stockholm.

I found these people in a very prosperous condition with good prospects for the future.

The Galician Colony at Saltcoats comprises 45 families and the Colony at Crooked Lake about 180 families. They are in good, comfortable houses and are very permanently established and doing well. They have earned this present year, from railway work, over \$10,000 besides producing crops and roots and putting up large quantities of hay.

The foregoing report will show that there has been some activity in connection with our work, and that a deep interest has been taken in immigration, and very substantial results produced. I have endeavoured, both in the United States and Canada, to show our great country to the very best advantage according to my ability, and have felt an individual responsibility in doing my work in such a manner as to make it most effectual. I feel encouraged at the outlook in the United States particularly and at the success of our Galicians and other colonies of foreigners.

The establishment of schools among these people is a very important matter, which I trust will receive attention in the proper quarters. The people are very anxious to learn our language and ways, and this is particularly the case with the Galicians; who have even adopted Canadian dress and discarded their traditional costume. They will soon become absorbed in our Canadian nationality and being people of good physique, and good complexion, moral, industrious and frugal, they should be acceptable as immigrants.

We have very many desirable locations in our country to colonize and can suit the peculiar characteristics of all comers with the best of land.

I have the honour to be, Sir, Your obedient servant,

C. W. SPEERS,  
*General Colonization Agent.*

## No. 8.

## REPORT OF W. H. PAULSON ON ICELANDIC IMMIGRATION.

WINNIPEG, 2nd September, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—Regarding my immigration work in Iceland since I went up there last fall, I beg to submit the following:—Icelandic immigration for Canada this year shows some increase on that of last year, although it does not come up to what it used to be about ten years ago. The reasons for the decrease in Icelandic immigration to Canada of late years are plain to me. In those years of large emigration from Iceland, the farmers there always had a ready market in England for their sheep, which represents the chief produce of that country. But this has been done away with by a recent Act, passed by the British Parliament. It is therefore very difficult for an Icelandic farmer of limited means to raise the necessary amount of cash to pay for himself and his family the passage money from Iceland to Winnipeg, as this change in the market has created a general scarcity of money in the country.

Another reason is, that the rate of passage from there to Canada was raised in the year 1894. Previous to that time, different SS. Lines were acting in Iceland through agencies established there, and competing for the trade of bringing out emigrants, and in 1893, the last year of large immigration from Iceland, competition brought the rate down as low as Kroner 100, or about \$26. But after that year the SS. Lines made a conference between themselves, fixing the rate at Kroner 160 or or about \$42 per adult. And seeing that this had a discouraging effect on emigration from there none of the SS. companies have done anything since in the matter.

For several years previous to the winter before last, nothing was done in Iceland to promote emigration, as the Government did not send an agent there, and the SS. companies were inactive, and when I first went up there to start my work, winter before last, the idea of emigrating to Canada I found was practically dead, and to arouse that question again, was uphill work. The higher classes, such as Government officials, merchants, landowners, shipowners, etc., are all hostile to emigration, and the press of the country is fully made use of, to publish bogus reports and anonymous letters, describing the hardships that people in Canada have to put up with, the unfavourable condition of the weather, scarcity of good land, etc.

Travelling through the country and lecturing at many different points, I had an opportunity of contradicting all such misstatements, and whenever I went, I left the people favourably impressed about Canada. But travelling in Iceland during the winter is very difficult, so I could cover but a part of the island.

It is far more difficult for the Icelanders to emigrate to this country than for people from the British Isles or Scandinavia to do so, as the fare from Iceland to Scotland comes in extra.

There is now in Iceland a great number of people willing to come to Canada if the poor market there and the rate of passage did not prevent it.

Immigrants for Canada from Iceland this year number about 130 souls. The first of them started from Iceland in March, and after that they were leaving in small parties. The biggest party (63) I accompanied all the way to Winnipeg.

About a week later I returned to Quebec to meet a party of 20 Icelanders that also went to Winnipeg. They all came by the Allan Line across the Atlantic. The last party came to Winnipeg July 28th.

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The class of immigrants from Iceland this year was of extraordinary fine quality, principally young men and women, and some families. Some amongst this people had considerable means.

Since my arrival I have secured situations for them all. Most of the men have gone out amongst the farmers in the Icelandic colonies in Manitoba. Single women have gone to different places as domestic servants. All paid their own fares to destination, and none of them have been assisted in any way, nor have they incurred a single dollar of expense to the Government since their arrival here, excepting my time during the month of August, which has to some extent been occupied by attending to them, as will always be the case with new arrivals, especially foreigners.

It is safe to say that the Icelanders rank amongst the best classes of immigrants that come to this country. They always come here with the intention of making Canada their home. They are ready to take any employment that may be available, and are, as a rule, steady, industrious people. They are willing and quick to adapt themselves to the ways of the country, and make first-class farmers, as the flourishing Icelandic settlements in Manitoba and the North-West prove.

I do not think it would be necessary to send an agent to Iceland this fall, as I have now spent two winters up there, but should a number of any consequence intend to come to Canada next summer, it would be advisable to send up there in the spring to give them encouragement, swell the number coming out as far as possible, and advise them and interpret for them on the way out.

I am in steady communication with parties in Iceland, and keep thoroughly posted as to the prospects of emigration from there. I would therefore be in a position to know in good time, next winter, whether it would be necessary to send an agent.

I have pointed out that unfavourable reports about Canada are circulated in Iceland, especially about the scarcity of good land, poor conditions of the farms and the hardships that the new comer must endure. I would therefore suggest that instead of sending home this winter, a good Icelandic pamphlet should be published, with good and clear testimonials from Icelandic farmers in Canada. The pamphlet should contain illustrations of several Icelandic homes, churches, etc.

This I think would be of good value, if carefully got up and distributed in Iceland. It should contain testimonials from well known farmers selected from the different districts in Iceland, and living in different points in this country. Also, there should be letters from the immigrants of these last years, testifying as to the voyage out here and the reception they got on their arrival, and what they think of the country.

I believe that there is a chance yet to get a large immigration from Iceland to help in building up our great country.

I am, Sir,

Your obedient servant,

W. H. PAULSON.

## No. 9.

## REPORT OF THE ACTING AGENT AT BRANDON, MANITOBA.

DOMINION LANDS OFFICE,

BRANDON, MAN., 3rd January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—In accordance with the annual custom I herewith forward a report of immigration during the past twelve months, and it is satisfactory to notice that the number of homestead entries in this district has increased by nearly double those of last year, in addition to which there is an increased demand for lands for sale, as most of the farmers who now follow mixed farming find that a quarter section is too little to enable them to keep cattle to any amount, in addition to having a paying amount of land under cultivation. The past season has not been quite so good for the crops as the two former ones, but the results are, I think, satisfactory, although in some parts of the district the wet and snowfall in October caused a delay in threshing operations, and some farmers suffered from the wet getting into the stacks; still the dry, frosty weather which succeeded enabled most of them to save their crops in good condition. The price of grain has not been as good as last year, but the prices realized have been fair and the farmers in the district are in a prosperous way, and increasing in stock year by year, and above all getting out of the debts incurred for farm machinery during the first years of settlement. The demand for land is largely on the increase, and it is satisfactory to notice that there are a great number of young Canadian farmers taking up land in this district, in fact the majority of the entrants have been of this class during the last three months. These young men find themselves cramped for room in Ontario, and coming as harvest hands have an opportunity of seeing the country, with the result that a large number of them remain here. The lands held as homesteads or pre-emptions by absentees have been inspected and reported on and in a great many cases the entries therefor have been cancelled and new entries granted, thus assisting the actual resident by putting good settlers in place of absent holders, with the result that the taxes will be reduced and better schools kept up. Dairy produce has been very good this last year, the prices realized being good. The live stock in the country has also been considerably increased, farmers finding mixed farming to pay better than all grain. Present appearances point to a large increase of immigration next year.

I am, Sir,

Your obedient servant,

WM. C. de BALINHARD,  
*Acting Agent.*

# Department of the Interior.

No. 10.

## REPORT OF W. BRAUN.

IMMIGRATION OFFICE,

BRANDON, 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I hereby report upon my work for 1898. From January 1st to January 13th was at Brandon attending to my usual duties. Then proceeded to St. Paul, remained there until March 18th, working under the instructions of Mr. Benjamin Davies, visiting various towns in the State of Minnesota, and calling on people who were anxious to settle in the province of Manitoba and the North-West Territories. A large number of settlers have come to our country as the result of work carried on by the agent of the Department in that part of the United States. I returned home and on the 23rd had orders to proceed to Winnipeg. Remained there until 3rd April, checking trains between Port Arthur and Winnipeg. Then returned to Brandon and performed my usual duties here until the 14th. Went to Calgary and remained on duty there until 19th June, assisting settlers in passing customs; meeting trains and assisting the incoming people in every possible way, and in some cases accompanying them to various parts of the territories. Then had orders to proceed to Winnipeg; reached there on 22nd June and remained until 4th July in connection with the quarantine; was at Brandon after that until 10th July when I went to the Stony Mountain quarantine. Remained there until the 13th, then attended Winnipeg Fair and returned to Brandon on the 18th. From 19th to 22nd was engaged with American delegates, showing them the Experimental Farm, Brandon Fair, &c., and on the 29th proceeded to Winnipeg and accompanied a number of German settlers to Grenfell. Returned on 1st August and remained at Brandon attending to my duties until 19th; then to Winnipeg and remained there, checking trains between Winnipeg and Port Arthur until 4th September, since which date I have been steadily engaged at Brandon.

I have the honour to be, Sir,

Your obedient servant,

WM. BRAUN.



## No. 11.

## REPORT OF PAUL WOOD, LAND GUIDE.

SIFTON, MAN., 2nd January, 1899.

W. F. McCREARY, Esq.,  
Commissioner of Immigration,  
Winnipeg.

SIR,—As you are aware, after the influx of immigrants had ceased in the autumn of 1897, I still continued in the employ of the Department as general agent for the Galician settlers.

From December until 1st April or thereabouts my work consisted of investigating and righting grievances of various kinds amongst Galicians and others, interpreting, corresponding both at and in connection with the Dominion Lands Office at Dauphin and for private individuals, collecting wages from farmers and others, obtaining employment for men, boys and girls. I found employment for a large number of the latter at a wage varying from \$3 to \$8 per month. Acting under instructions from the Agent of Dominion Lands at Dauphin, I also undertook the inspection of several homesteads, valuation of improvements, &c., and other work in which a knowledge of the Galician tongue was essential.

During the month of March, I also canvassed the various Galician colonies, taking notes as to the number in each family, stock of flour and cash in hand, also as to amount of land ready for crop and the amount of seed on hand. The result of this canvass you received from me. Subsequently I distributed the seed grain and potatoes and garden seeds sent by the Department to the various applicants, making out liens in duplicate on the homesteads of those who received these advances. In order to find employment for many of the women unable to leave home, I advertised in several of the newspapers asking farmers and others to send in raw wool for manufacture into yarn. Of this I received about 300 lbs. which was satisfactorily spun at the rate of 15c. to 20c. per lb. I also obtained employment for several skilled artisans; a gunsmith, a stonemason, a blacksmith and a carpenter. In many cases I aided Galicians in the purchase of cows and oxen.

During the following spring and summer months I resumed my work as land guide, my services being almost exclusively devoted to Galicians. Some twelve Canadian settlers were located by me and between 90 and 100 Galicians, principally in townships 26th, 27th and 28th in Ranges 19, 21 and 22.

On 10th November, I moved down to Sifton, a central point in the Galician settlement. By the courtesy of Mr. D. B. Hanna, superintendent of the Lake Manitoba Railway & Canal Co., I was permitted to occupy part of the station house for the winter. During the month of November eight more families came in, which I located.

During the year I wrote some 350 letters in connection with the above work.

I also procured employment for some 75 men, boys and girls at from \$10 to \$26 per month for the former and \$3 to \$8 per month for the latter.

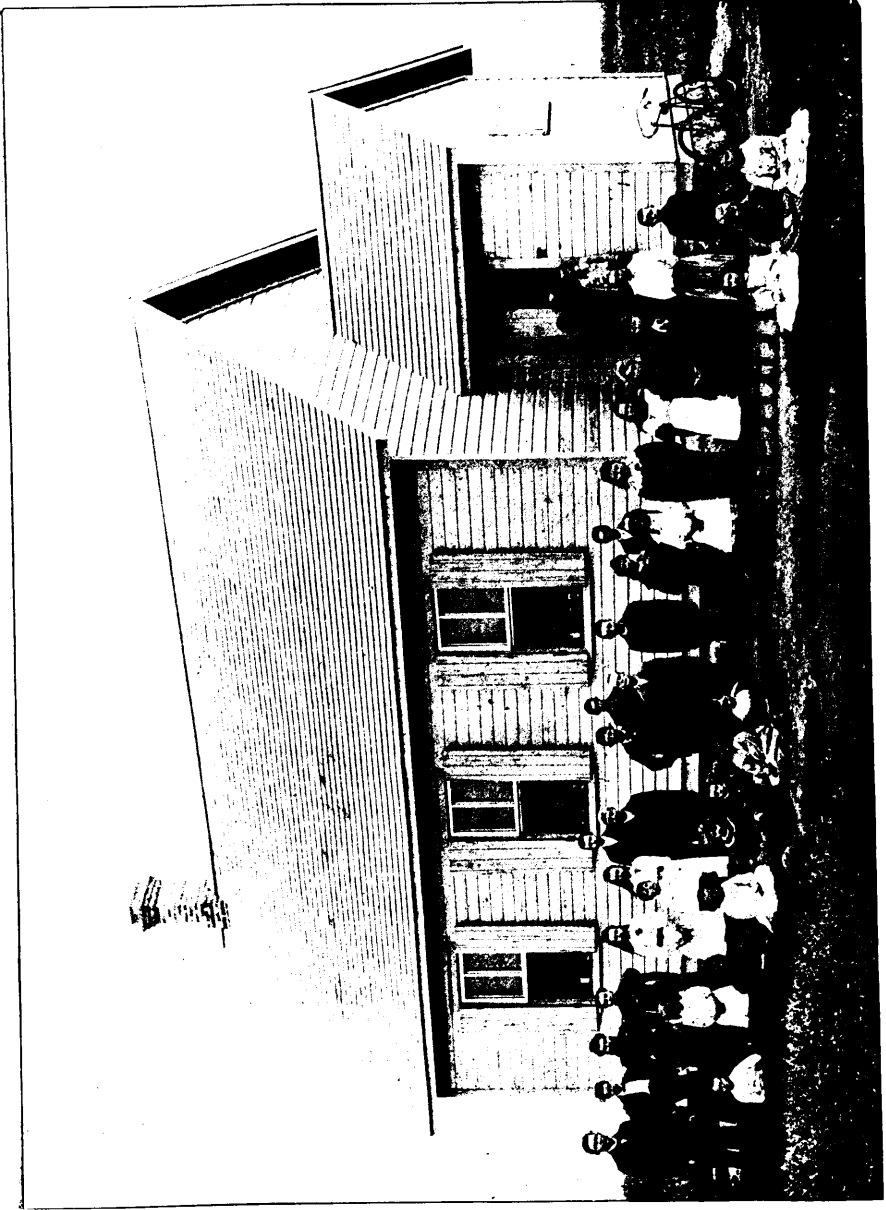
I find that there is a marked general improvement in the condition of the Galicians. Nearly all of those who settled during 1897, have now comfortable buildings and fair crops of wheat, barley, potatoes and garden stuff. Many have several hundred bushels of potatoes for sale and from three to fifteen acres ready for crop next year. I find the two great wants of these people are teams for breaking and schools for the education of their children.

They have made marked progress in the acquirement of the English language, and many of them are rapidly discarding habits and modes which stand in the way of a complete adaptation to the manners of Canadian life.

I am, Sir,

Your obedient servant,

PAUL WOOD,  
*Land Guide.*



A COUNTRY SCHOOL IN THE NORTH-WEST.

# Department of the Interior.

No. 12.

## REPORT OF THE AGENT AT MINNEDOSA.

MINNEDOSA, MANITOBA, 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—In submitting my report in connection with immigration, I have the honour to say that the past season has been a successful one, the number of homestead entries granted in this district being largely in excess of those granted during the previous year, and besides this, a considerable number of farms have been bought from the Railway Companies and other corporations, as well as from private parties.

This indicates a strong and growing desire to secure homes in the Province, which is further evidenced by the fact that lands which heretofore were not considered quite desirable, are now eagerly sought after.

Owing to an abundant rainfall the crops grew luxuriantly and the yield of grain was quite satisfactory. Besides this, consequent on plenty of moisture, the grazing was exceptionally good, cattle rapidly improved in condition and their products, butter and cheese, were increased.

The number of cattle sold and shipped is steadily increasing, but large as this business has become it is difficult to predict what it will be in the future.

The large area of land covered with nutritious grasses—now unused, but which formerly furnished the sustenance of innumerable herds of buffalo, is nature's indication that the North-West is especially well adapted for grazing purposes and that the cattle trade, large as it has become, is only in its infancy.

I have the honour to be, Sir,

Your obedient servant,

JOHN FLESHER,  
*Agent Dominion Lands.*

## No. 13

## REPORT OF THE AGENT AT DAUPHIN, MANITOBA.

DAUPHIN, 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

Sir,—Again I have much pleasure in being able to give a favourable report of the Dauphin district, in connection with immigration; the past year having been even more favourable than the preceding one; and the hopes expressed in the report of 1897, of a large increase in our settlement have been realized.

We have had all through the year, a steady influx of people, the large majority of whom have cast in their lot with us, and located; in fact I may say that hardly any, after seeing the district, have left without locating; any who have were people who desired to locate colonies and failed to secure lands *en bloc*.

The Swan River country has proved very attractive, and next season, owing to the facilities of travel furnished by the extension of the Lake Manitoba Railway, promises to draw a large number of settlers. The reports as to the natural advantages of this territory have been confirmed by those who located last spring, in time to put in crops.

In the townships put on the market last spring some homestead entries have been recorded, and I understand a very large quantity of railway land has been applied for.

It is to be hoped that those lands that have been surveyed during the past season will be placed on the market at the earliest possible date, and that survey of other desirable lands in this and other parts of the Dauphin district will be made, and the lands thrown open to settlement at the first opportunity, as it has been demonstrated that in the large majority of cases, new comers are not prepared to hold lands as squatters; and of the area now in the market but a small portion is available for homesteading.

Crops through the district have been good; the price, however, has been somewhat low, in spite of the fact that four elevators and three flat warehouses are doing business in Dauphin alone, while the other towns on the railway furnish their quota of buyers. Oats were not sown to any great extent, and it is doubtful if the supply will meet the local demand. Barley is but very little grown. The root crops have been more abundant, though it is expected that by spring potatoes will bring good figures.

Considerable improvement has been made in roads, owing to the creation of a Municipality, in the older part of the settlement, and the opening of a colonization road from here to Swan River has made it possible for settlers to drive in there without any trouble, the streams being well bridged, and hills graded.

Schools and churches are springing up in all parts, where settlement justifies, as well as new postal routes and offices.

Our people are prosperous, and contented, no cases of relief having come up since last winter, when some assistance was given to those Galicians who arrived too late to put in crops during 1897. I do not expect there will be any great need for help during the coming winter.

These Galicians have as a whole done fairly well, and are considered good workers by the railway contractors, who have employed a number of them.

I would beg to urge on the Department, the advisability of preserving intact, the present bounds of the timber reserve, on the Riding Mountains, as well as the necessity of forming similar reserves in the Duck Mountains, and any other large bodies of timber, that may be found to the north; and the taking of some decisive steps toward preventing encroachment on the part of squatters, of whom a large number have already located within the limits of the Riding Mountains timber belt.

## Department of the Interior.

The health of the district I am thankful to say has been good, and excepting some cases of typhoid, but little sickness has been reported.

The following table will I think show that this district has been an attractive one during the year; and I would point out that the record of free homestead entries is not to be taken as a basis on which to measure the increase in population, as large numbers of new comers have bought and located on railway lands.

### STATEMENT of work performed :—

Homesteads granted . . . . .	736
Applications for patent taken . . . . .	172
“ “ recommended . . . . .	189
“ for cancellation taken . . . . .	272
“ “ put through . . . . .	170

I have the honour to be, Sir,

Your obedient servant,

F. K. HERCHMER,  
*Agent.*

## No. 14.

## REPORT OF SUB-AGENT, SWAN RIVER, MANITOBA.

SWAN RIVER, 21st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I hereby submit my report, covering the period from May 1st to December 1st, 1898.

Number of Homestead entries granted	290
do $\frac{1}{4}$ sections purchased	8
do Squatters on Homestead land	111
do Homestead applied for not yet granted	86
do do Reserve for Doukhobortsi	111
Total	606

The total population of the sub-district is now 208; of this number 25 were married women and 68 children.

The population represented by the Homesteads taken and applied for is 1517. (The Doukhobortsi not included.)

65 per cent of the new settlers are Canadians, the next highest in numbers are English, Scotch, Irish, Americans, Icelanders, Welsh, Danes, Belgians and Swedes.

Number of acres of land broken is	170
do horses	184
do horned cattle	247
do sheep	26
do mules	2
do donkey	1

Ploughing was carried on this fall until 4th November.

The Government tents were erected on 13th May, they were greatly used and appreciated, and were occupied every day without a break until 13th November, 1898.

I have learned from T. A. Burrows, Esq., the Railway Land Commissioner, that 250 quarter sections have been applied for to purchase from the company from 1st May to 1st December, 1898.

The railway company have laid the track to within about 20 miles from here, and will run a weekly train (every Monday) from Portage la Prairie to the end of track.

The distance from here to Dauphin is	92 miles.
do Portage la Prairie	212 do
do Winnipeg	268 do

There is very much need of a bridge being built across the Swan and Rolling Rivers by next Spring.

The warmest days during the past Summer were:—

July 12, when the thermometer registered 97 degrees in shade.	
August 18th, do do	85 do
September 27th, do do	90 do

## Department of the Interior.

Wheat, oats and barley, although sown late, ripened and did well. Vegetables and roots grew splendidly. Mr. C. Henderson on S. 36, T. 36, R. 26, planted potatoes on June 24th ; they ripened and they are using them this winter.

The Methodists, Presbyterians and Church of England hold religious service in the district.

The first frost this Fall was on September 8th, very light.

The second do do 9th, 6 degrees.

The third do do 19th, 2 do

We had a heavy snow-storm on October 2nd, snow fell to 8 inches on the level. But it all disappeared in a few days, then we had very fine weather all fall.

I am, Sir,

Your obedient servant,

H. HARLEY,  
*Sub-Land Agent*

## No. 15.

## REPORT OF THE AGENT AT ALAMEDA.

DOMINION LANDS OFFICE,

ALAMEDA, ASSA., 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to submit the annual immigration report of the Alameda district for the year ending the 31st December, 1898.

There has been a noticeable increase in all branches of the work of the office, 386 homestead entries having been granted, as compared with 106 for the corresponding time during the previous year, an increase of 252. On account of the extra work, I found it necessary to apply for assistance, which was furnished by the transference here of Mr. A. Norquay, formerly of the Dauphin office staff.

On the whole, the season for this district has been fairly prosperous; farmers have obtained fair prices for their produce, cattle have turned out well, and the settlers throughout this section, while they could have wished for better prices this year, are contented and hopeful for the future. A factor toward this end was the high price paid for grain last year, when a number of them realized sufficient to clear off their store and machinery debts, enabling them to start afresh, free from these encumbrances.

A good indication of the prosperity of the district is found in the acquisition by the resident settlers of additional land in proximity to their original holdings. I have great pleasure in reporting that such has been the case here, there being a large amount of land sold by the C. P. R. Co., particularly in the Moose Mountain and Weyburn sections, to actual settlers. In the first mentioned place, the prospect of the extension of the Pipestone branch of the C. P. R. has conduced largely to that result, the settlers to the south of Moose Mountain in nearly all instances, wishing to acquire a further quantity while it is still available, and before the rush, which will undoubtedly occur for these lands, begins as soon as railway facilities are extended to that part.

While on the subject of the Moose Mountain district, a few facts in connection with that section of the country might be of interest. The Moose Mountain section is one of the oldest settlements in this part of the country. It occupies that slope immediately adjoining, and to the south of the mountain. The natural advantages of this strip of country are very apparent and cannot but impress any one who has travelled over it. The land is a rich black loam, capable of producing the finest crops, twenty-five to thirty bushels of wheat to the acre being a very ordinary occurrence; timber fit for building purposes and fuel is plentiful in the mountain, hay is abundant in the numerous depressions, the country being gently undulating, and water can be had by digging from fifteen to thirty feet, while ample pasturage can be had for grazing stock. The settlement is composed principally of Scotch and Canadian farmers who are all in good circumstances, and have gradually gathered around them through the increase in their herds, and what grain they have grown, sufficient of this world's goods to place them in a comfortable independency. In fact it is a current saying that there is not a judgment or execution registered against one man in that settlement, a fact that any district might well be proud of especially when it is considered that this settlement is about seventeen years old. The want of railway facilities, however, has been badly felt, and the building through the district of the Pipestone branch will give a great impetus to farming generally. A large additional acreage has been broken up this year in expectation of this extension, and it is to be hoped that the settlers will not be disappointed.

With regard to the Weyburn country, I might say that it is only as recently as this fall that any attention has been directed to this district. It lies on the Soo Line,



## Department of the Interior.

about midway between the International boundary and the main line of the C. P. R., and is said to contain some very fine agricultural, grazing and hay land. It has been the general impression heretofore that this land lay in an arid belt and was unfit for agricultural purposes. The testimony of the few settlers who have been there for a number of years is altogether contrary to that idea. Although the majority who have been there for any length of time are ranchers, still, a few have farmed with good results and claim they have demonstrated its value as an agricultural district, while in the matter of ranching I might say that five hundred cattle of first-class quality were shipped from there this fall. There is said to be a strip of solid hay twenty-five to thirty miles in length and one half to two miles wide, from which an ample supply can be secured for winter requirements. This, in conjunction with the arable land lying immediately adjacent, should, and undoubtedly will, attract a large immigration. There has already been a large influx of settlers there this fall, one hundred and seventeen entries having been granted, many of them have purchased C. P. R. lands, and from all reports are thoroughly satisfied with their prospects in that district.

I might also make mention of that part of the country lying at the south-west corner of Moose Mountain, where a flourishing French settlement exists, and which is being largely augmented by immigrants from France and North Dakota, principally ex-Canadians coming from the latter place who report a number of their friends are desirous of emigrating. This (North Dakota) should be a good field for immigration work.

There is also the nucleus of a German settlement established in township 5, range 3 W. 2nd M., a short distance to the north of Alameda. These settlers came from Michigan last spring in time to put in a crop and have broken a considerable area on their homesteads for next year's cropping. They have written to a number of their friends to come out, it being their intention to form a large settlement of their people there. These settlers are thoroughly satisfied with their prospects, some of them having purchased as well as homesteaded land.

With regard to the general subject of immigration, I am of the opinion that the good effects of the really vigorous policy inaugurated and now being carried out will bear fruit not only for the time being, as it is doing, but for years to come. An interest which is noticeable every day has been aroused about this country among our neighbours to the south, the numerous delegations travelling over the country have carried away with them a new and favourable conception of its worth and will undoubtedly be the means of influencing a large emigration from their respective districts.

During the early part of the year I was absent two months and a half on immigration work in South Dakota and Michigan, where I attended various meetings and met and conversed personally with a large number of people desirous of obtaining some information about this country. I found a great interest manifested in it wherever I went, and since my return, a number of those I met on that occasion have come and settled in this district. One man from South Dakota was so pleased with the appearance of the country that he purchased and paid in full for a whole section of C.P.R. land, and intends having his sons take up homesteads as well. Another good settler from that part who came this spring and rented a place on shares, this fall had a crop of twelve hundred bushels of No. 1 hard wheat. He homesteaded a quarter section and has all but a few acres of it broken and prepared for cropping next year. The success of such settlers will have a great influence in inducing emigration from their former neighbourhood to this part.

I was personally acquainted previously with the German delegates from Michigan who visited this district the year before last, but met them again with a number of their friends while there this spring, and had an opportunity of explaining the advantages of this country to them. Those who have come are the ones already mentioned as settled in township 5, range 3. Indications point to a large immigration of their friends next year.

The different delegations visiting this district this year, have all expressed themselves as thoroughly satisfied with it; some have taken up land and others have written to say they intend doing so the coming spring.

There will be, when all is marketed, approximately speaking, three hundred and fifty thousand bushels of wheat for shipment from this district this season, which might be averaged at fifty-four cents per bushel, making one hundred and eighty-nine thousand dollars; and about two thousand five hundred head of cattle that might be averaged at thirty-five dollars per head, making eighty-seven thousand five hundred dollars; these two sources of revenue netting the farmers two hundred and sixty-seven thousand five hundred dollars.

A showing of this kind indicates a country with advantages that might well be looked into by the intending settler. The development of the large areas now lying idle and yet to be opened up would give it a producing value compared with which the above is simply a bagatelle. There is yet a large amount of first-class land to be homesteaded here, water can be had by digging from fifteen to thirty feet, fuel is abundant in the coal areas along the Souris River, where settlers can secure it at the mouth of the mines for one dollar per ton, or at the railway stations, by the car load, at two dollars and fifty cents per ton. There is also an abundance of building timber and fuel in the Moose Mountain, which supplies the country adjacent to it, and there is a sufficient quantity of hay scattered here and there all over the country to meet the requirements of the settler. This district is one in short, that can without hesitation be recommended to the intending emigrant.

I have the honour to be, Sir,

Your obedient servant,

D. A. McEWEN,  
*Dominion Lands and Immigration Agent.*

# Department of the Interior.

No. 16.

## REPORT OF J. S. CRERAR.

YORKTON, Assa., 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to submit my report for the year 1898 on the work of immigration in the district of Yorkton. I may say that in the early part of the season I was instructed to proceed to the State of Iowa to do some work. I remained there ten weeks and a report of the work done in that time was sent to the Department on the 31st March. From work done in Iowa several settlers have come from that State to Western Canada, and from reports and correspondence I receive I judge that we will have a very large influx of immigrants from that State next spring. Quite a large lot of settlers came in to this district this year from other States of the Union; from Minnesota, the Dakotas and as far south as Texas. Some of these had considerable money and some of them bought land in the vicinity of Yorkton. We had quite a large immigration of Polanders from the United States who all took up land south and south-west of Yorkton and are doing well; all of them had more or less capital and brought their effects with them. The Hungarian Colony in Township 24, Range 5, is doing well. The colonists are a fine class of farmers, and have a lot of land under cultivation. A small colony of these people started last spring in Townships 25 and 26, Range 7, near the Beaver Hills, and from reports received by these people from friends in the old country (Hungary) we will have quite a large immigration from that country at no distant day. Delegates from the States of Minnesota, the Dakotas, Wisconsin, Iowa and Kansas visited this district last season and were well impressed with the country as a farming and stock district; and from correspondence I receive from some of them there is a great move being made of intending settlers to Western Canada as the result of these delegates' reports and the work of the agents in the States generally.

We had this year quite a lot of Galicians from Austria, who have settled in the colonies formed in 1897, viz., Crooked Lake, Beaver Hills and Saltcoats. Some of these people had considerable money and they have purchased stock.

In my report last year I said I had come to the conclusion that these people would make good settlers, and I am happy to be able to confirm what I then said. They have earned a lot of money this year on the M. & N. W. Ry., C. P. R., and with farmers, and have spent it (over \$10,000) in Yorkton and vicinity in the purchase of provisions and cattle, and they are no longer looked on as paupers by the older settlers. They are well pleased with the country and from reports I have from railway men, farmers and ranchmen these people are as good workers as any other nationality, and the prejudice of a year ago does not exist now.

The most important matter in connection with these people is schools, and the proper education of their children. This matter will, I trust, have the early and careful attention of the proper authorities.

The district is prospering and all the settlers are contented. Crops were a fair average, not so large a yield as last year, but what was short was made up with the cattle as this was an exceedingly good year for cattle, the prices were good, and as the farmers in this district all go in for mixed farming they had more or less fat cattle to sell, and like farmers in other districts the farmers in this one think they are in the best district and that they have the best farms in Western Canada.

I have the honour to be, Sir,

Your obedient servant,

J. S. CRERAR,  
*Dominion Immigration Agent.*

## No. 17.

## REPORT OF THE ACTING AGENT AT REGINA.

DOMINION LANDS OFFICE,

REGINA, 3rd January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour, in compliance with head office circular letter of the 3rd December, 1898, to make my Immigration Report for 1898. The amount of work has been greater than in any previous year, at this agency. Besides the 193 persons accommodated at the Immigrant shed, here, quite a number of foreigners have arrived who have relatives or friends in the country.

From the information that I have received from the different colonies, I am in a position to state that in nearly every case the settlers are doing well. New and commodious dwellings, barns and outhouses have been erected so that the country has a much more home-like appearance.

A considerable number of the new settlers are people who have been sent for by relatives who came here a few years ago and have done well.

A great many delegates have visited this point, and all seemed to be very much surprised at the immense yield of wheat, oats, vegetables and roots of all kinds.

If the agriculturists of Great Britain could be convinced how much better off they would be if they would transfer their labours to this country, I am satisfied that a much larger number would emigrate. I may say that in every instance where a farm labourer has come to this country and has hired out for a few years he has done well and in a comparatively short time he has become possessed of a farm, and stock, of his own.

I have received a great many letters of inquiry from foreign countries, especially from the United States, and I am convinced that we shall have a large increase of new settlers this year.

I have the honour to be, Sir,

Your obedient servant,

A. J. FRASER,  
*Acting Immigration Agent.*

# Department of the Interior.

No. 18.

## REPORT OF THE SUB-AGENT AT MEDICINE HAT.

MEDICINE HAT, N.W.T., 23rd December, 1898.

W. F. McCREARY, Esq.,  
Commissioner of Immigration.

SIR,—I beg to submit my report of the sub-agency at Medicine Hat of the Dominion Lands and Immigration Office for the year 1898. This agency was reopened at Medicine Hat on the 1st day of April, 1898. Since that date the business of the office has been increasing slowly but steadily. Up to the present some sixty-five homesteads have been applied for, and there are still quite a number of settlers in the immediate vicinity of the town who have not as yet made their applications, but I am informed that it is their intention to do so in the early spring.

The settlers have had a good season, with plenty of purchasers and high prices for all kinds of stock and produce.

Your agent visited Josephsburg last October and found the settlers all well satisfied, with comfortable quarters for their families, and owning from one to three cows, two horses, a waggon, abundance of hay for their stock, also vegetables for the requirements of their families and in some cases a quantity for market. He was informed by several that some thirty families were expected to come into the settlement in the coming spring.

The district of Josephsburg is some thirty-five miles from the town of Medicine Hat. At present the settlers have a private school, but they are now making arrangements whereby a public school may be opened in the spring.

It is found by experience that cattle, horses and sheep require each a different kind of range, and it would be of great assistance to the agent in his work of locating settlers, if permission were granted him to visit the different sections of the district and learn at what points locations and grasses for cattle, horses and sheep are to be found, and in this way he could with little loss of time to the settler locate him in the place most suitable for the particular line of business he may desire to follow, and to his satisfaction. I may say that the prospects for a good year are good, and that there is no doubt whatever but that this country is one of the best to be found.

We have on the north and on the south of this district, particularly in the north along the Red Deer, large areas of splendid lands for the settler, and if a surveyor was sent in this direction next spring he could be employed to good advantage, as large sections could be opened up for settlement at very small expense.

Accompanying this report will be found memoranda of the grain, roots and vegetables raised at or near the town of Medicine Hat during the past year.

I am, Sir,

Your obedient servant,

L. B. COCHRAN,  
*Sub-agent, Immigration and Dominion Lands, Medicine Hat.*

Memoranda of grain, roots and vegetables raised at or near the town of Medicine Hat, in the year 1898 :—

Wheat.....	680 bushels.
Oats .....	3,400 "
Barley.....	425 "
Potatoes .....	3,700 "

Other vegetables, 640 bushels, not including the Josephsburg district.

Memoranda of cattle shipped from Medicine Hat district :—

Cattle.....	4,131
Horses .....	43
Sheep.....	6,540

Hides inspected for local market, 1898, 670.

Cattle shipped in 1896 .....	902
“ “ 1897 .....	1,813
“ “ 1898 .....	4,131

# Department of the Interior.

No. 19.

## REPORT OF AGENT AT PRINCE ALBERT.

OFFICE OF DOMINION LANDS,

PRINCE ALBERT, 4th January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to report as follows in connection with the immigration branch of my duties.

There has been a steady but quiet influx of settlers to this district, brought here for the most part by the good reports of friends who had preceded them. The number of homestead entries for the year ended 30th June, 1898, was 143, and for the six months ending the 31st December last, 132, which gives an idea of the increase in immigration. The increase in the cattle industry has been very marked. No less than 6,200 head have been shipped out of the district of Saskatchewan in the last year and a half, realizing \$146,400 (this includes, however, 600 head shipped at Dundurn and 1,200 head from Battleford). The settlers generally are increasing and improving their herds, so that the outlook from this source is bright.

The crop of 1897 was good, and wheat touched the dollar mark. This year the wheat crop was only fair, but sample good, but the oat crop was very poor. But notwithstanding these facts the settlers feel contented and hopeful.

The Mennonites who have settled in the vicinity of Rosthern and Hague, are doing remarkably well. The shipment of wheat alone from Rosthern this year, will exceed 100,000 bushels. Peter Abrams, who settled near Rosthern in 1892, had 4,000 bushels of wheat, besides other grains and cattle; and there are numbers of cases of settlers having 1,000, 2,000 and 3,000 bushels of wheat for sale.

The Galicians, who came here last summer, are contented and doing well; and the majority of the French settlers who came direct from France some five years ago, and settled near Duck Lake, are now wealthy.

In conclusion, I may say that the whole Saskatchewan valley only requires to be opened up with railways and it will settle itself.

I am, Sir,

Your obedient servant.

JOHN McTAGGART,  
*Agent of Dominion Lands and Immigration.*

## No. 20.

## REPORT OF THE AGENT AT CALGARY.

DOMINION LANDS OFFICE,

CALGARY, 31st December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—Referring to the Secretary's letter of the 3rd instant, I have the honour to submit the following report on immigration matters in this district, covering the twelve months ending this date.

On the 9th instant I forwarded my report in connection with the Lands Department for the fiscal year ended 30th June last. Since that date 65 homestead entries have been made, making 135 entries for the calendar year, an increase over the last year of 46.

The immigration into the whole of Alberta during 1898, has been quite large, especially into the northern portion, and in the southern portion much larger than the previous year—although it would be a very difficult matter to arrive at the figures, as there are many who have purchased from parties who have received their patents, or squatted in unsurveyed parts of the country. The number of homestead entries granted is therefore not a complete indication of the settlement that has taken place. The settlement this year has directed itself about one half to the townships lying north and the other half to the townships lying south of the Bow River; the country running to about township 30, north, is what is called the ranching country, beyond that being excellently adapted for mixed farming. The immigration hall here has been utilized during the calendar year by about 1,400 persons, an increase over last year of 600, which does not, however, afford an adequate means either, of estimating the total amount of immigration, as a large number of settlers put up at hotels, or proceed to their destination without stopping over in Calgary.

The crops during the past year have been remarkably good throughout nearly the whole of Alberta, particularly in this district. The hay crop was very good and the season for cutting and curing same very fair.

The ranching business is in a very prosperous condition and prices are, I think, higher for cattle than they have been for years. There is also a better sale for horses of all kinds, especially the heavy horse. The market in the Kootenays of British Columbia, coupled with the reasonable cost of transportation, make the price of cattle, and in fact all kinds of stock and farm products, better than if everything depended upon Liverpool and other markets. The grass throughout the greater portion of Southern Alberta cured very well on the ranges, and this has insured good feed for all kinds of stock running out this winter. This fall and winter so far has been a capital one for stock, consequently they are all in splendid shape and no feeding has been done at all, except calves and some young heifers with calf. The minimum temperature during this month was below zero on four days only, viz., the 13th,  $-10^{\circ}$ , 29th,  $-05^{\circ}$ , 30th,  $-17^{\circ}$ , 31st,  $-30^{\circ}$ ; the mean daily minimum for the rest of the month was 17 above.

Irrigation is a subject which is a very important one in connection with ranching, as the capacity for wintering a large bunch of cattle safely, depends largely upon how much feed one can produce, as a bad winter would soon prove. While a large amount of natural hay is available in most localities, yet in a dry year this might not be the case and it is only a question of time when a majority of rancher, in order to be on the safe side, will require to grow the greater part of their feed. The same thing applies to other products. Irrigation will increase the production and make land which is now of very little value, except for grazing purposes, very valuable for general farming.

The creamery business is making rapid headway, and under the management of the Government is a great boon to the dairy farmer, as the results of the past two years have shown. A settler with a very small amount of capital and who has the work within his own family, can, by buying a few cows and locating in the neighbourhood of any of the creameries, start right into good business at once and make a good living; and in the meantime the head of the family is given an opportunity of looking around



## Department of the Interior.

or working out, thus avoiding the necessity of going to much expense until he is perfectly satisfied with his surroundings.

There has been considerable activity in the timber trade during the past year, and this also has contributed to the general prosperity of the district.

I have the honour to be, Sir,

Your obedient servant,

J. R. SUTHERLAND,

*Agent.*

### RETURNS of arrivals at the Dominion Immigration Hall, Calgary, from 1st July to 31st December, 1898.

Date.	English.	Irish.	Scotch.	German.	Scandinavian.	French.	American.	Canadian.	Russian.	Total.	ADULTS.		CHILDREN.		Total.
											M.	F.	M.	F.	
1898.															
July .....	14		8	38	34	3	6	18	43	161	41	31	46	43	161
August .....	9				3	10	1	6		29	17	4	3	5	29
September .....	8	11	3	29	15		40	22		128	46	25	36	21	128
October .....	1			32	25		15	1	11	85	19	16	23	27	85
November .....	6		1	3	32		1	9	5	57	16	8	21	12	57
December .....		8	8		1		19		6	42	14	11	5	12	42
Totals .....	38	19	20	102	110	10	82	56	65	502	153	95	134	120	502

JOHN CUSHING,

*Caretaker, Immigration Hall, Calgary.*

### RETURNS of arrivals at the Dominion Immigration Hall Calgary, for the year 1898.

Date.	English.	Irish.	Scotch.	German.	Scandinavian.	French.	American.	Canadian.	Russian.	Total souls.	ADULTS.		CHILDREN.		Total.
											M.	F.	M.	F.	
1888.															
January .....	1						2	8	18	29	20	6	2	1	29
February .....							14	8	2	42	14	6	14	8	42
March .....	19	4	12	11	5	11	15	73	25	175	98	23	30	24	175
April .....	34	4	14	34	34	17	70	117	59	383	168	62	84	69	383
May .....	50	4	3	19	10	30	15	40	1	172	89	18	30	35	172
June .....	11	1	10	3	6	9	18	42		100	57	14	15	14	100
July .....	14		8	38	34		6	18	43	161	41	31	46	43	161
August .....	9				3	10	1	6		29	17	4	3	5	29
September .....	8	11	3	29	15		40	22		128	46	25	36	21	128
October .....	1			32	25		15	1	11	85	19	16	23	27	85
November .....	6		1	3	32		1	9	5	57	16	8	21	12	57
December .....		8	8		1		19		6	42	14	11	5	12	42
Totals .....	153	32	59	186	165	93	216	330	169	1,403	599	224	369	271	1,403

JOHN CUSHING,

*Caretaker, Immigration Hall, Calgary.*

Department of the Interior, Ottawa.

## No. 21.

## REPORT OF THE AGENT AT RED DEER.

IMMIGRATION OFFICE, RED DEER, 27th December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I beg leave to report that the immigration into this district has been much in advance of that of last year, and that in point of education, capital and experience in practical farming possessed by the later arrivals, there has also been a decided improvement. The settlement effected here has been fairly distributed over the whole district. The great proportion of the immigrants is from the British Isles and Iceland, although the United States have contributed a considerable number. The building provided for their temporary accommodation, was closed at an early date in the season, owing to an outbreak of measles, and, therefore, the number accommodated is small. However, the bulk of the arrivals was of a class not requiring such accommodation. I would suggest that, if it has not been done already, a sectional subdivision be made of townships 39 to 42 in ranges 2 and 3, and of townships 37 and 38 in range 3, all west of the 5th meridian. This has already formed a subject of communication between this office and yourself. Although these townships are very rough and broken, and their soil is not of a high order, still they would allow for the expansion of the Swedish and Icelandic colonies which are settled in contiguous townships. Moreover, it is a feature of the peculiar farming of these hardworking peoples that it brings inferior lands under profitable cultivation. I would also propose for consideration the expediency of establishing permanent approaches or rights of way to the big lakes in the district, such as Devil's Pine Lake, Buffalo Lake, Snake Lake and Gull Lake. The lakes mentioned are remarkable for beauty of scenery, and abound in pike and perch, and a few varieties of smaller fish, and were salmon trout and whitefish introduced into their waters, their attractions and value as fishing grounds would be largely enhanced.

I have the honour to be, Sir,

Your obedient servant,

J. GEORGE JESSUP,  
*Immigration Agent.*



THE "ARCH." N.E.  $\frac{1}{4}$ , SECTION 29, TOWNSHIP 50, RANGE 3 W. 5 MER.

10 feet of coal under water and 18 feet above, in all 28 feet of solid coal.

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# Department of the Interior.

No. 22.

## REPORT OF THE AGENT AT EDMONTON.

DOMINION LANDS OFFICE,  
EDMONTON, 2nd January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to report on certain matters connected with the Edmonton Dominion Lands Agency for the year 1898, and to express the hope that they may be found of interest from an immigration standpoint.

The number of homestead entries granted during the year is 815, being largely in excess of any previous year since 1893. The figures indicate an acceleration in the progress of settlement, and I may say that this acceleration is further attested by the increase reported for the year in the land sales of the Canadian Pacific Railway Company in this district, and also by a very important advance in the sale to newcomers of lands formerly held by individual owners.

The improved ratio at which settlement has proceeded during the year 1898 is due to several conspicuous causes, among which may be noted (1) the improved industrial condition of the district, (2) the employment of effective means in the advertisement of this improvement, and (3) the overflow—increasing year by year—of the agricultural population of the United States.

The more prosperous condition of the agricultural industry results largely from greatly reduced freight rates, which during the past two years have opened the southern British Columbia market to the products of Northern Alberta.

Many delegates from Eastern Canada and from various States of the Union have visited the Edmonton district during the past season. Their inquiries and personal observation have given them so favourable an impression of the agricultural possibilities here that it is probable we shall attract in 1899 a considerable number of settlers from the home communities of the delegates referred to. The increase of the United States population each year by a million and a half must—now that the free lands of the Union are practically exhausted—have a tendency to force the surplus agricultural population into the vacuum north of the international boundary.

A very important matter for this district is that a cold storage system be established at an early date which will safeguard all products of the dairy and farm-yard, poultry, &c., from the time they leave the farmers' possession until they reach the final consumer in the Kootenay, Liverpool or Japan, &c. This, one would suppose, would be a fitting enterprise for the railway companies, which may have such large interests in the North-West, and, managed in a capable manner, the enterprise should in itself be a profitable one.

It is gratifying to be able to report that the farmers of the Edmonton district have already taken the preliminary steps toward an effective organization for flour milling purposes. It must be conceded that the success of this effort will ensure a constant fair price for wheat which, under present methods of marketing, the farmer fails to realize. Local milling on a large scale will also incidentally tend to further the cattle, dairy and bacon industries.

When these improvements in the industrial situation are achieved the prosperity of Northern Alberta ought to be assured, and the effect will be to attract such an increased population to this region as to bring the railway lands more generally into demand.

The railway companies have this as well as other incentives to help on the good work in the manner above indicated, and when their lands pass into individual control, and become taxable, we may hope to overcome many difficulties which are at the present moment retarding both industrial and social progress, not the least of which is the existence of these untaxable and unoccupied railway lands.

It is perhaps desirable to say something from a local point of view concerning the Austrian settlers from the provinces of Galicia and Buckowina whose value as settlers and as prospective citizens has been somewhat largely discussed. These people number at present about 450 families; they are located in the two settlements of Edna and Rabbit Hills. By far the larger number is at Edna; two-thirds are supposed to belong to the Russian Orthodox, and one third to the United (Roman) Catholic Church. The Edna settlement is from 50 to 75 miles distant—in an easterly direction—from Edmonton; the Rabbit Hills settlement about 15 miles. The agricultural sentiment or instinct is strongly developed in these people; they are, for the most part, simple in their habits, and industrious, with perhaps about the percentage of vicious and indolent persons common to the grade of civilization to which they belong, and they are, by reason of their frugality, capable of enduring the disadvantages of their remoteness from market with very little ill effect. They are, I believe, qualified to make, in time, an industrial success in the present situation; and no good reason has been urged, as yet, why their social habits should not improve from our point of view, with the improvement in their material condition.

It is, in my opinion, advisable that it should be made known to all immigrants intending settlement in the Edmonton district that the best free lands, most conveniently situated with respect to the railway, have been disposed of, and that the land now available for homestead entry lies beyond the twenty-mile limit from the chief stations on the Calgary and Edmonton Railway. The railway company is still, however, offering its lands for sale at \$3 per acre, and on favourable terms as to payment. The price at which individual owners are willing to sell varies from \$3 to \$6 per acre, according to situation, improvements, &c.

It will obviate a great deal of unnecessary disappointment and complaint, if the agents of the Department abroad are kept informed as to the progress of settlement, sufficiently to enable them to advise the intending settler how far from a railway point he must now go in order to obtain free land.

I have the honour to be, Sir,

Your obedient servant,

R. A. RUTTAN.  
*Agent of Dominion Lands.*

# Department of the Interior.

No. 23.

## REPORT OF THOMAS BENNETT.

SOUTH EDMONTON, ALBERTA, 31st December, 1898.

W. F. McCREARY, Esq.,  
Commissioner of Immigration.

SIR,—I have the honour to submit my annual report for 1898.

The number of immigrants who arrived at this agency during the year was 2,595, as against 962 in 1897. The number mentioned is exclusive of Klondike parties or transient visitors. The countries from which they came were as follows: Austria (Galicians) 1,357; United States, 785 (many of whom were Canadian or British born), 292 Canadians, from the eastern provinces, 126 from Russia, 29 from Great Britain, and 6 from Chili.

The Galicians as a whole were of the poorer class of Austrians, but they have proved themselves an industrious and hard-working lot of people. I visited their colony in February last, and found that a large majority of them had made good progress for the time they had been settled on their homesteads, viz.: from six to nine months, and have no doubt that they will, through industry and hard work, become prosperous settlers.

The settlers who came from the States are generally well off, bringing with them one to two carloads each of stock, implements and settlers' effects. The reports of those who have been here two or three years are so encouraging that many of their old neighbours and friends are preparing to come in next spring. They are surprised to find the climate so different from the reports circulated in some American papers. A little incident occurred last summer which I may mention. A settler from South Dakota arrived here last spring and bought a farm on which was 40 acres ready for crop; this he sowed in wheat, but becoming discouraged he let the farm on shares, sold his teams, waggons, &c., and returned to his former home in South Dakota, where he had a farm of 160 acres all in crop. He turned up here again this week, however, with some friends, and two carloads of stock and implements, a somewhat poorer but a wiser man. He said the reason he returned to Edmonton was, that he received more value for his share of the 40 acres of wheat he left in Alberta, than he did for the whole crop off his 160 acres in South Dakota, and a country and climate that could do that was good enough for him and he was going to stay with it.

The yield of grain or vegetables is not quite up to that of 1897, but a larger acreage was under crop, so that the output will be over that of last year.

The amount of grain shipped from Edmonton station, from the crop of 1897, was: wheat 236,299 bushels, oats 365,409 bushels, barley 60,002 bushels, rye 1,140 bushels. This was exclusive of the wheat ground at the flouring mill of the Edmonton Milling Company, Fraser's Mill on the Saskatchewan, and the flour mill at Fort Saskatchewan, which would amount to 100,000 bushels, while the National Mill of Brackman & Ker has made about 180,000 bushels oats into rolled oats. This was the third crop for about seven-eighths of the settlers. I regret not being able to give the threshing reports of this year in detail, the threshers having promised to send them in but failed to do so, except three, which I give as follows: Wm. Walker, Clover Bar, 58,000 bushels; August Schatz, Indian Reserve, 27,000, and Wm. Verner, Indian Reserve, 33,000. None of these parties threshed at a distance of more than three miles from their home.

This is a good district for mixed farming, and the settlers who are keeping stock are doing well. Horses, pigs and sheep also do well and find a good market.

The creameries are of great benefit to the settlers, particularly since the Government undertook the management of them.

The grain market is well represented here there being six buyers, which guarantees fair competition and there is elevator capacity amounting to over 200,000 bushels.

We have good schools and an excellent staff of teachers throughout this district, also churches and pastors of the different denominations, who are zealous in attending to the spiritual wants of the people.

I have the honour to be, Sir,

Your obedient servant,

THOS. BENNETT,

*Immigration Agent.*

# Department of the Interior.

No. 24.

## REPORT OF C. W. SUTTER.

EDMONTON, N.W.T., 9th January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to submit this my report for the year ending 31st December, 1898.

By your instructions I spent the months of January, February and March in the States of Illinois and Indiana, working in conjunction with Mr. C. J. Broughton, Canadian Government Agent at Chicago, to induce immigration to my district. In Indiana I visited a number of settlements of the German Dunkers, many of whom are looking for new fields for settlement as their farms are too small. These people had scarcely heard of Canada, and appeared to be under the impression that it was only a small island. Upon such people it was difficult to produce much effect, and no tangible results could be expected for the first year. In the Illinois German settlements visited by me, I found on the other hand a number who desired to seek new homes in this district, provided they could succeed in disposing of their properties. Many proposed removing here this year, but were unable to sell their properties to advantage. I confidently expect good results from this region next spring and summer.

From the first of April until the middle of December, I was all but continuously occupied in driving delegates over the country in every direction, and looking after the welfare of intending settlers, the rest of my time being devoted to answering letters from many places asking information. Last year I reported the arrival here of 51 delegates. This number increased in 1898 to 170, a striking proof of the extent to which the North-West has become known as a field for immigration. The remarks made in my last report as to the opinions expressed by one and all of these delegates regarding this district apply with equal force to those who visited the country in 1898.

These delegates came from the following States and Countries:—

Massachusetts.....	12
Dakota.....	15
Illinois.....	18
Iowa.....	12
Kansas.....	18
Minnesota.....	32
Michigan.....	17
Montana.....	3
Missouri.....	6
Nebraska.....	9
Wisconsin.....	20
Germany.....	3
Scotland.....	2
Russia.....	2

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The best proof of their appreciation of the attractions of Alberta is that quite a number of the above delegates entered for homesteads or bought railway lands themselves before returning home.



The prediction made by me last year regarding immigration from the United States has been fully verified, as will appear by reference to the schedule annexed hereto. These so-called American settlers are for the most part ex-Canadians, the rest being foreigners. It may be confidently predicted that from this time forth there will be from this source a steady yearly influx of the most desirable class of settlers, possessed of more or less capital.

As to foreign immigration, other than Ruthenian, I can safely say that the figures given in the schedule fall far too short of the actual number of arrivals. Letters from settlers in the various German colonies in Alberta have had the effect of bringing their friends and relatives hither to settle at once upon lands already selected for them. These people are met at the railway station by those on whose advice they came, and go direct to their destination, not coming into contact with the immigration officials in any way. They are nearly all in comfortable circumstances, and many have bought improved farms. It is in the nature of things impossible to keep track of immigrants arriving thus.

The schedule shows a large number of Ruthenians, who are both from Galicia and Buckowina, some few even from Roumania. While some may think they are in some respects not as desirable as other settlers, the fact of their industry, thrift and future prosperity may be considered settled. Government aid will be required only for those who arrived late in the season. These people alone have offered as bonus to a proposed customs grist mill at Edna, about 2,500 bushels of wheat, which does not look like poverty. It can be fairly said that their material progress is on a par with that of any other race in the country.

The grain crop this year, although not on the average up to the phenomenal yield of 1897, was excellent, damage from frost or spring drought occurring in but few cases, and the increase of acreage under cultivation was enormous. Stocks of cattle have also largely increased, and the sales of agricultural machinery have been very heavy.

The creameries still continue to do good work, and the increase in number of milch cows kept is a proof of the appreciation of the farmers.

Owing to my constant absence from Edmonton accompanying delegates, I found it impossible to keep an accurate record of immigrants arriving each month, but in the schedule annexed, I have given the total arriving from each country during the year, so far as they came under my observation. The actual immigration is, however, as remarked above, undoubtedly much greater than this return shows.

I have the honour to be, Sir,

Your obedient servant,

C. W. SUTTER,  
*Immigration Agent.*

## Department of the Interior.

### SCHEDULE of Immigrants Arriving from Countries named, during the Year 1898.

	Male.	Female.	Total.
Austria (Germans).....	15	9	24
do (Ruthenians).....	800	575	1,375
British Columbia.....	7	3	10
Chili, S. America.....	6	3	9
Dakota, U.S.....	31	14	45
England.....	13	7	20
Germany.....	2	0	2
Illinois, U.S.....	34	19	53
Iowa, U.S.....	5	1	6
Ireland.....	5	3	8
Kansas, U.S.....	8	5	13
Manitoba.....	16	10	26
Massachusetts, U.S.....	22	10	32
Michigan, U.S.....	71	29	100
Minnesota, U.S.....	36	19	55
Montana, U.S.....	6	0	6
Nebraska, U.S.....	13	6	19
New Hampshire, U.S.....	13	6	19
Nova Scotia.....	12	0	12
Ontario.....	91	33	124
Oregon, U.S.....	5	3	8
Pennsylvania, U.S.....	7	5	12
Quebec.....	4	5	9
Scotland.....	10	5	15
Switzerland.....	1	0	1
Vermont, U.S.....	3	1	4
Wisconsin, U.S.....	53	21	74
Totals.....	1,289	792	2,081

N. B.—This schedule, owing to reasons explained in report, does not show all the arrivals.

C. W. SUTTER,  
*Immigration Agent*

## No. 25.

## REPORT OF THE AGENT AT LETHBRIDGE.

DOMINION LANDS OFFICE,

LETHBRIDGE, 30th December, 1898.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to submit the following report on immigration matters in this district during the past year.

The principal centre of settlement has been in the vicinity of Cardston, and the majority of settlers from Utah and adjoining States. These settlers are all of a very superior class, and bring with them not only a certain amount of capital, but what, in this country, is infinitely better, the experience necessary to enable them at once to go to work and make comfortable homes for themselves. Consequently there is no discontent, but from one and all are heard words of praise for the country, and expressions of satisfaction with their lot. These settlers consequently make the best of immigration agents, and the effect of the reports sent their friends is easily discernible by the large increase in the number of letters of inquiry received at this office, and the confident expectation of a large accession to the number of our settlers in the near future. Most of those coming into this district have a knowledge of, and confidence in irrigation and are convinced of the adaptability of the country therefor.

Settlement in the vicinity of Pincher Creek and Medicine Hat also goes steadily on. A number of families have squatted on unsurveyed lands along Milk River, near the international boundary, and I trust that the suggestions already made to the Department, that certain townships in that part of the district should be subdivided, may be acted upon the coming season.

During the past year one important enterprise has been completed, and another inaugurated. The completion of the Crow's Nest Pass Railway has provided facilities for shipping east and west all products of the district, and has opened up in the mining districts of British Columbia the best market attainable, and the St. Mary's Irrigation Canal, on which considerable work has already been done, will when completed reclaim thousands of acres of arid lands, every acre of which will, no doubt, be placed under cultivation so soon as available; and as it is the intention to divide the irrigated lands into small holdings, it means a very large increase in the population of the district, within a very short time. Much credit is due to the Irrigation Company for the energetic manner in which they are pushing forward the work.

The crops, especially in the vicinity of Pincher Creek and Cardston, have been very good. Cattle ranching is in a prosperous condition, the past season having proved very favourable, and the prospects for the coming season excellent. Our first snow and moderately cold weather set in on the 29th of this month, so that if we should now have some severe weather it cannot in all probability last long, and the cattle are in good condition to withstand considerable cold weather and other hardships. About 10,000 cattle and 1,000 horses have been exported during the past season, and about 6,000 young cattle imported as stockers.

Prairie fires have done but little damage to the ranges during the past season, owing, no doubt, to the comparatively heavy rainfalls keeping the grass green all summer.

The Galt Coal Mines have been running to their full capacity during the whole summer, and this means much to the prosperity of Lethbridge and vicinity.

I am, Sir,

Your obedient servant,

W. H. COTTINGHAM,  
*Agent Dominion Lands.*

# Department of the Interior.

No. 26.

## REPORT OF THE AGENT AT KAMLOOPS.

DOMINION LANDS OFFICE,

KAMLOOPS, B.C., 3rd January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—I have the honour to submit the following report for the year ended 31st ultimo, and to show comparatively the transactions of the year mentioned, and for that ended 31st December, 1897 :—

1897.	
No. of acres homesteaded . . . . .	6,089·57
General sales at \$5 per acre . . . . .	\$1,293·17
Homestead sales at \$1 per acre . . . . .	\$2,631·45
1898.	
No. of acres homesteaded . . . . .	7,415·95
General sales at \$5 per acre . . . . .	\$2,962·43
Homestead sales at \$1 per acre . . . . .	\$2,338·58

Nearly all the land disposed of in 1898 has been to actual settlers, of whom the majority are farmers from Eastern Canada and the Western States. There is no volume of direct immigration from Europe.

Stockmen have done well this year, and each season is proving that this section of British Columbia is adapted for fruit growing as well as for general farming.

Numerous letters are received from the Western States making inquiries, and I would suggest that this office be furnished with a supply of pamphlets of general information, and with a liberal supply of British Columbia land regulations to send to persons who write for information.

I have the honour to be, Sir,

Your obedient servant,

E. A. NASH,  
*Dominion Lands Agent.*

## No. 27.

## REPORT OF THE AGENT AT NEW WESTMINSTER.

DOMINION LANDS OFFICE,

NEW WESTMINSTER, B.C.; 2nd January, 1899.

The Commissioner of Immigration,  
Winnipeg.

SIR,—In accordance with the instructions contained in Departmental circulars of the 17th November and 3rd December last, I beg to submit a report on the subject of immigration.

It being expensive to reach British Columbia, in comparison with Manitoba and the North-West, it is natural that parties making enquiry as to homes here, desire some special advantages. It is understood that east of the Rocky Mountains lands are readily brought into a state of cultivation, while here the clearing of timber in the coast regions, and the irrigation of the interior parts, demand particular attention.

The people who inquire about British Columbia ask questions as to the extent of open lands, and when answers are made to the effect that such lands are limited in area, it is customary to draw attention to the fact of the milder climate and the opportunities presented for fruit raising, making the country more desirable for permanent homes, and particularly in the cases of those coming from England, Wales, Ireland and Scotland. Again, the proximity to the sea is an attractive feature to many whose former homes were so situated.

It is difficult to find within the agricultural districts any vacant tract to accommodate a colony desiring to settle together. On the other hand, individual settlers taking a little time after coming to the country in travelling through the settled parts usually succeed in seeing and arranging to obtain a place suitable for their purposes. While viewing the country in that way, the facilities for marketing produce come under consideration. It is well known that mountain ranges compel routes of travel into certain directions which must be adapting themselves to the conditions opening out.

To enter specifically into the question of the movements of people through this province during the year 1898, I may state that the greater number came for the purpose of mining. A limited number have come to settle on farms. These arrivals appear to be satisfied with the prospects here.

Owing to the fire of the 10th and 11th of September last, which destroyed the Land Office, I am not able to give the number from each country.

I have the honour to be, Sir,

Your obedient servant,

JOHN MCKENZIE,

*Agent Dominion Lands and Immigration Agent*

# Department of the Interior.

## OPERATIONS IN THE UNITED STATES.

### No. 1.

#### REPORT OF WILL J. WHITE, INSPECTOR OF AGENCIES.

OTTAWA, 30th of January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit the following, relating to the work of immigration from the United States during the past year.

In the earlier part of the year a considerable portion of my time was devoted to preparing advertising matter used in the various mediums selected for the purpose of advertising, in making contracts with the different advertising agencies, and having a supervision over the work when it was performed. The publishers with whom dealings were had rendered many favours in the way of reading notices, directing the attention of their readers to Western Canada, while the influence of the advertising agents was such that very liberal use was given of the columns over which they had control, a privilege of which full advantage was taken, with the result that a large amount of space was occupied in these papers in the interests of immigration, for which nothing was asked in return.

The States in which advertising was done were North and South Dakota, Minnesota, Wisconsin, Michigan, Illinois, Indiana, Iowa, Ohio, Nebraska, Kansas, Wyoming, Utah, Texas, Pennsylvania and Georgia. The first eleven States were fully covered, almost every paper published in them carrying the advertisement of the immigration branch of the Department in regard to free Government lands. The results of the work were soon apparent in an immense increase in the correspondence of this branch of the Department, and in that of the several agents employed.

Following closely upon this came the work of arranging for the excursions of such of the American Press Associations as had announced their desire to make the trip over the Canadian Pacific through Western Canada, in accordance with the invitation extended to them by the Honourable Mr. Sifton and Sir William Van Horne. This occupied considerable time, but it was well spent, as, during the months of July and August, we were successful in inducing the associations of Minnesota, Wisconsin and Michigan to make the trip. There were in all over a thousand newspapers represented, and the reports sent to the different papers, by the editors, were exceedingly satisfactory, and of a character that was likely to arouse the interest in Canadian affairs that was desired.

Copies of the papers containing the notices and accounts of the trip were sent to the Department, and have been placed on file, it being the intention to use portions of the matter as immigration literature. If at all possible it is the intention to secure two or three associations from some of the other Western States to take a trip this coming summer, the experiment of last summer's work in this connection being so beneficial in its results.

Immediately on completing the work of escorting the editors to the Pacific Coast, it was necessary to make preparations for the several State fairs, the agents having during the summer secured ample space in the principal fair buildings. A large portion of the exhibits, consisting of grains in straw, grasses, roots, vegetables, &c., from the farms of Western Canada had been arranged by the Department of Agriculture at Winnipeg, and the manner in which the work was done reflected great credit on those who had it in hand. These exhibits were supplemented by others from the Experimental Farms at Brandon and Indian Head. In this way there was a combination, which gave to the agent in charge at each fair, an opportunity to make a display creditable to Canada, and that they did so is evidenced by the many flattering notices which appeared in the newspapers, and by the highly flattering letters from State fair managers. There is so much possible benefit to our interests to be derived from these exhibitions that I unhesitatingly recommend their continuance, and would feel pleased if the Department could

see its way clear to extending them to other States as well as those to which attention was given last year, namely, Minnesota, South Dakota, Wisconsin, Illinois, Ohio, Indiana and Michigan. In Minnesota at the close of the State fair, the exhibit was divided into three parts, and in the hands of Mr. Davies, Mr. Holmes and Mr. Parker circuits of the county fairs were made, occupying nearly the entire month of October. Since that time the agents in that State have made use of a portion of the exhibit while attending and addressing public meetings. In Wisconsin the exhibit was used at Milwaukee, Chippewa Falls and Eau Claire. Mr. C. W. Speers, who had also been in attendance at St. Paul, took charge at Milwaukee, and Mr. H. McRae, at the two other places, Mr. T. O. Currie, the agent in this State being at Omaha, in charge of the immigration interests there during a portion of the time of the Trans-Mississippi Exposition. Mr. Broughton, the agent in Illinois, secured a splendid position at the Springfield show, afterwards with Mr. Speers going to Indianapolis and Terre Haute, Indiana. The exhibit at Yankton, S. D., was looked after by Mr. W. H. Rogers, assisted by Mr. Rankin. It was subsequently removed and exhibited at Watertown and Aberdeen. A splendid exhibit was made at Toledo, Ohio, by Mr. M. V. McInnes, and at Grand Rapids, Mich., the representatives of the Canadian Government in that State, Messrs. McInnes, Caven and Grieve, had a most successful time and a splendid display. Several county fairs in Michigan were visited, and as in Minnesota the exhibit was afterwards made use of at different points throughout the State.

During the year I visited the different agents frequently and rendered such assistance as I was in a position to do in directing their movements, and it is pleasing to be able to state that I found them always working in the best interests of immigration. They are held in high esteem in the localities in which they are operating, and what is quite essential, have the confidence of the public. It was found impossible to define any particular line upon which they should work, but each agent had adapted himself to the surrounding conditions in which he found himself. So long as there was nothing in this to prevent good work being done, no change was advised. In all cases the agents were found to be working in harmony with the officials of the railways, and they were thus often in a position to secure concessions to settlers in the way of lower rates than those ordinarily given.

Your attention is directed to the fact that owing to the advertising that was done in States outside of those in which regular agents were employed, many applications for information came therefrom, and I am satisfied from this fact that many excellent settlers could be secured from these States were it possible to extend the work into them.

In the report which I had the honour to make to you one year ago, the possibilities for good work by the Government agents, were pointed out, reasons being given at the time for this conclusion. The results have proved the correctness of what I then said, as during the past summer and fall there was a steady flow of immigrants from the United States into Western Canada, and it was not confined to those months which might naturally be looked upon as migratory months, but was kept up during the entire summer and fall, and until the first of January of this year. The conditions that existed then exist to-day, fully as pronounced, and there is the best reason to believe that last year's immigration to Canada from the United States is but the beginning of a movement which will assume still greater proportions during the present year.

This report should not be closed without making reference to the Trans-Mississippi Exposition. This was one of the best mediums that was adopted for making known the resources of Canada, and should the management of the Exposition decide to continue it during the coming summer there is no doubt that Canada would derive much advantage if an exhibit of her resources were made this year as well.

In addition to the other work a portion of my time was given to the preparation of pamphlets, &c., in the interests of immigration.

I remain, Sir,

Your obedient servant,

WILL. J. WHITE,

*Inspector U.S. Agencies.*

# Department of the Interior.

No. 2.

REPORT OF M. V. McINNES.

ROOM 1, MERRILL BLOCK,  
DETROIT, MICH., U.S.A., 12th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit my annual report for the year ending 31st December, 1898.

The number of immigrants who went from this point to the Canadian west during the past year was 620. In addition to these, who took advantage of the low rate for settlers, a large number went from here by other routes, taking advantage of the cut railway rates prevailing from April to November. The majority of these latter went to Rossland and Kootenay, and to other points in British Columbia, making a total of 976 leaving this point for the Canadian west during the year 1898, taking with them 16 cars of settlers' effects, of the value of \$33,000. The amount of literature distributed was largely in excess of previous years, and the correspondence proportionately greater.

The German colony which I started in the Alameda district in 1897 fully realized my expectations, 374 homesteads having been entered there as against 107 the previous year, an increase of nearly three hundred per cent. Alberta, Dauphin, Qu'Appelle, Brandon, Minnedosa, Lethbridge, Red Deer and Edmonton districts have made a like increase.

I held meetings at various points throughout Ohio, distributed large quantities of advertising matter and appointed 32 local agents. I have appointed local agents in Pennsylvania and Wyoming, and during the harvest season in the Canadian west I sent delegates from Ohio and Pennsylvania that they might see the country at its best. The reports of these delegates will be found attached hereto, and will doubtless be found useful in the preparation of immigration literature at the Department, being all favourable to our country.

The Tri-State Fair held at Toledo, Ohio, is one of the largest gatherings of farmers in the west, and the best samples of the products of several States are on exhibition there. I attended this fair with a supply of the grains, grasses and other products of Western Canada, with which I fitted up the space allotted me by the fair committee. The exhibit attracted a good deal of attention and was a revelation to many who had been told that our North-West was too cold to produce sustenance for man or beast. These exhibits of the products of Western Canada at the great State and county fairs I look upon as one of the best methods of advertising our country.

The following letter and press notice are clipped from the *Toledo Daily News* :

“ CANADA AT TOLEDO.

“ Mr. M. V. McInnes, who has been showing a collection of Canadian products at the Tri-State Fair, at Toledo, has received many congratulations from the Americans who inspected it. Among the letters received is one from Mr. W. D. Perce, the President of the Fair, as follows :—

“ ‘ DEAR SIR,—I am directed on behalf of the officials of the Tri-State Fair at Toledo, Ohio, to express to you and through you to the Canadian Government our hearty thanks for the fine display of products of Western Canada exhibited at our fair. I can assure you that it was a great surprise to the officials and the many thousands of visitors to see such fine samples of grains and grasses from Manitoba and the West. Your Govern-



ment must be commended for their enterprise in placing these exhibits before the American farmers at the different State and county fairs throughout the United States. I have no doubt, in fact, I am sure, that these object lessons will be the cause of inducing a large number of our surplus farmers to locate and help fill up the Canadian West. I can assure you that your exhibit was a drawing card to our fair, and I trust that you will be able to be with us again next year."

The Toledo *Daily News* speaks as follows of the exhibit :—

"One of the finest and most interesting exhibits at the Tri-State Fair is that of the Canadian Government. Grains and grasses from Manitoba and Alberta are the chief products shown, and notable in extent is the crowd of people that throng the building examining them. The Canadian Government have displayed considerable enterprise in bringing their exhibit to Lucas County, and it has an appreciative effect upon the many farmers who are attending the fair. The exhibit is in charge of M. V. McInnes, Chief Canadian Government Agent. He is assisted by George Whitney, Jun., the local agent."

The Michigan State Fair held at Grand Rapids lasts for a week and is largely attended, not only by the farmers from Michigan, but also from the adjoining State, and the best samples of every product raised were on exhibition.

By the courtesy of the directors, the Canadian west was allotted the whole of one side of agriculture hall; and we put forth our best efforts to make the Canadian exhibit second to none. How we succeeded will be gathered from the following press notices and letter from the officers of the fair. From the Grand Rapids *Daily Herald* :—

#### "THE DISPLAY FROM WESTERN CANADA.

"The Canadian Government is making a magnificent display of the products of Western Canada in agricultural hall, and, as it is the best feature on the grounds, it should not be overlooked by sightseers. It embraces the entire right side of the building and every inch of space is utilized for the purpose. That Canada goes to the expense that it has in making this exhibit simply to show the great resources of Western Canada is a step of enterprise that is worthy of praise and the least Michiganders can do to show their appreciation of this handsome show is to visit it in crowds and inspect carefully the grains and grasses displayed. The entire enterprise is under the personal supervision of Messrs. McInnes, Caven and Grieve of the Canadian Government Agency.

"It is easy to see the object of the Canadian Government in making this show is to let the people of the United States know just what kind of a country Western Canada is, and that we may become familiar with the many advantages offered to locate there, and see with our own eyes just what that country contains. In the display will be found specimens of grains and grasses of Western Canada that compare more than favourably with those of any part of the United States. The entire show is so arranged as to present a most attractive appearance, and certainly the designer is deserving of special note for the excellent work he put on it. It is well worth any one's attention to visit the agricultural hall and give an hour to this exhibit."

The officials of the Michigan Fair wrote me a letter as follows :—

"We cannot allow you to leave us without thanking you for the fine display of products of Western Canada. We appreciate this, and we are glad to see the Union Jack and the Stars and Stripes floating together at our exhibition. The exhibition was the finest and largest ever shown in this State, and we beg of you on behalf of every officer of the association, to present our best compliments to the Minister of the Interior and thank him for his enterprise in having exhibits shown to the people of this country. We firmly believe that as a result you will receive a large influx of settlers from this State who will locate in Western Canada and no doubt become prosperous citizens.

"WILLIAM BELL,  
" *President.*

"H. S. FRALLICK,  
" *Secretary.*"

## Department of the Interior.

I have thus briefly given a resume of the work done and results of my efforts in furtherance of immigration during the year.

In my report of last year I stated my intention of opening up the States of Ohio and Pennsylvania. This I did by holding meetings, distributing literature and sending delegations to Western Canada. Altogether I distributed from the office 310,000 pamphlets, &c., to the agencies in Michigan, Ohio, Indiana, Illinois, Kansas, Missouri, Nebraska, the North and South Dakotas, Wyoming, Idaho, Pennsylvania, Kentucky, Iowa, Minnesota, New York and West Virginia.

For the year 1899, I will expect to report a large increase over the year just closed. I arrive at this conclusion from the large amount of advertizing our Canadian west has received the past year; the enormous increase of correspondence from all over the United States asking for information; the universal satisfaction expressed by those already settled in the west, and the national progress of the country. The cordial feeling existing between Canada and the United States also helps matters, as it is manifested in a more friendly attitude of the press, and among the people, towards settlement in our western provinces. The people of the United States are awakening to the fact that a great agricultural country of free homesteads is lying at their doors, capable of receiving all their surplus and over-taxed population.

I firmly believe that the movement of settlers from this country will eclipse in numbers and quality that of all other countries. The American is a most desirable settler: he is accustomed to our methods of farming, speaks our language, is governed by similar laws, assimilates with us and becomes a Canadian more readily than a foreigner not possessing these advantages; besides there are tens of thousands of ex-Canadians in the United States who will ultimately make the Canadian west their home.

I have the honour to be, Sir,

Your obedient servant,

M. V. McINNES,  
*Canadian Government Agent.*

No. 3.

REPORT OF D. L. CAVEN.

CANADIAN NORTH-WEST COLONIZATION AGENCY,

BAD AXE, MICHIGAN, U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to present you my annual report of work done in my district for 1898.

The total number of settlers I sent from my territory to the North-West and Ontario was 1,188, that is to say :—

Via Sarnia.....	347	} For Manitoba, North-West Territories, and British Columbia, . 1,026 people.
“ Windsor: ..	80	
“ “Soo”.....	96	
“ Ft. William.	125	
“ Emerson....	22	
“ Lynn.....	95	
“ Neche.....	44	
“ North Portal.	95	
“ Coutts.....	14	
“ Wanetta....	108	
“ Sarnia.....	29	} For Algoma, Lake of the Woods district and Ontario, 162 people.
“ “Soo”.....	38	
“ Ft. William.	95	
<hr/> Total..... 1,188		

Who took with them :—

18 car-loads of stock and effects.	
95,000 lbs., smaller lots and effects (or a total of 23 cars).	
1 car settlers' effects for Ontario.	
Estimated value of stock and chattels. }	For Manitoba and North-West Territories. \$53,300 00
Estimated value.....	For Ontario 1,200 00
Total. ....	<hr/> \$54,500 00
Estimated amount of cash taken into Canada by the 1,188 persons.....	103,000 00
Total value of chattels and cash.....	<hr/> \$157,500 00

The results of my work during the past year, judging by these figures, are, therefore, highly gratifying. My correspondence has more than doubled, also the demand for literature, and I have every reason to expect a still larger number of people to go from here to our country in the spring of 1899. The prospects are brighter in every respect

## Department of the Interior.

than they were a year ago, and the satisfactory reports sent back by those who have already settled in Canada to their friends here, help us greatly in our work.

During the past three months I have made exhibits of North-West products in different towns in the following counties, viz., Saginaw, Shiwas, Ionia, Kent, Montcalm, Barrie, Tuscola, Sanilac, Eaton, Huron, and St. Clair, with a supply of grains in straw and sacks, and prairie grasses, &c., supplied me by the Department, from Manitoba, Assiniboia, Saskatchewan and Alberta. In my opinion there is no better plan of convincing the farmers than by showing them the products of the country. Since the State Fair, I have visited 23 towns, remaining from one to three days at each with my exhibit, and had, all told, 36,600 visitors, distributing to them 21,100 pamphlets.

In conclusion I may add that no effort on my part will be spared in advancing the immigration work for Western Canada.

I have the honour to be, Sir,

Your obedient servant,

D. L. CAVEN,  
*Canadian Government Agent.*

## No. 4.

## REPORT OF JAMES GRIEVE.

MOUNT PLEASANT, MICH., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to present you my report of work done in Northern Michigan during the year 1898.

In the early part of the year I visited a number of points with exhibits of grain and grasses, and in this way brought hundreds of farmers face to face with samples of what our western country produces. This, in my opinion, is not only the cheapest but the most effective way of carrying on the work. During the months of February and March I exhibited at the following places: Clare, Farwell, Rosebush, Mt. Pleasant, Shepherd, St. Louis, Alma, Reed City, Baldwin, Hersey and a number of minor points, staying from two to five days, according to the size of the place. In this way I came in personal contact with hundreds who had never heard Western Canada spoken of, except as a region of perpetual snow and frost, and it was simply a revelation to many of them, that such grains could be successfully grown in that northern latitude.

As a partial result of my winter's work, I had the satisfaction of taking some four hundred people out of the counties of Clare, Midland and Isabella alone. Another very effective method of advertising was by means of exhibiting the products of Western Canada at the Michigan State Fair, held at Grand Rapids, and also at a number of the county fairs.

Our exhibit at Grand Rapids, in charge of Messrs. McInnes and Caven and myself, was pronounced by all to be the finest of the kind ever seen in the State, it being placed in the agricultural hall alongside of a similar exhibit made by the State Agricultural College of Lansing, Michigan, which, by the way, only served to show the vast superiority of the grains grown in Western Canada. I also exhibited at Isabella, Gratiot and Montcalm county fairs, with gratifying success, so far as meeting and conversing with hundreds of farmers and distributing several thousand pamphlets was concerned. What the ultimate result will be rests with the future.

During the early spring months I sent a number of delegates to the North-West, and in every case these delegates have returned delighted with the country, and have brought back to their friends in Michigan glowing accounts of what they have seen. They were, without exception, practical farmers, most of them having served as municipal officers in some capacity in their respective townships. Their reports were, therefore, looked forward to, and excited a great deal of interest among their fellow farmers. One of the most representative of these delegates, Mr. Kirkpatrick, of Clare, Mich., was so impressed with Alberta that he homesteaded three-quarters of a section of land about 14 miles west of Leduc, and at once made arrangements for moving out his family, also his sons with their wives and families; there they now are, and although they did not arrive in Alberta until June, they have put up comfortable buildings, and have some 25 acres broken and prepared for spring seeding, and the opinion they express is that it is the finest land in the world.

I wish to acknowledge the kind assistance rendered by the Canadian Pacific Rail way in furnishing free transportation to delegates, thus enabling them to visit and report upon the country, its soil, climate and condition generally as a field for immigration.

Another matter of special importance is that unlike former years, very few are returning to my district, only three families have come back from Western Canada

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during the past year, and those who have come back do not speak harshly of the country, but they lacked what is necessary to endure pioneer life in all new countries, viz., "backbone."

During the latter part of March and the month of April I accompanied several parties of settlers as far as the "Soo," and later in the season I accompanied one party of twenty-five people to St. Paul. In September I went through to Edmonton with a party of fifty settlers. I was accompanied on the last trip by Mr. J. H. Calliver, of Clare, agent of the Flint and Pere Marquette Railroad, at that point. I was much impressed and pleased at the rapid progress the western country has made since my visit a year ago, especially the Edmonton district. During the few days at our disposal we visited a number of Michigan families who had been from one to three years in the country, and in every case we found them well pleased, each and all of them expressing unbounded confidence in the country. Many of them are making first-class immigrant agents by writing back to their friends and urging them to take Horace Greeley's advice and go west, and by so doing they are materially assisting in the good work.

The total number of settlers who have left my territory for Manitoba and the Territory during the year just closed was 508:—Via Windsor, 160; Sault Ste. Marie, 93; St. Paul, 245; Fort William, 10; total, 508. These people took with them nine car loads of settlers' effects, and several thousand pounds in less than car load lots.

In conclusion, I beg to thank those associated with me in carrying on the work in this country, and the representatives of the press for the kindly way in which I have been treated by them, for more gentlemanly people cannot be found than the newspaper men of Michigan. My special acknowledgments are also due your Department for keeping me well supplied with printed matter, and in many ways aiding and encouraging me in the field, and I firmly believe that gratifying as the results of last year's work have been, the present year, 1899, will see the largest emigration from this State to the Canadian North-West of any year in our country's history.

I have the honour to be, Sir,

Your obedient servant,

JAMES GRIEVE,  
*Canadian Government Agent, Mt. Pleasant, Mich.*

## No. 5.

## REPORT OF J. S. CRAWFORD.

OFFICE OF THE CANADIAN GOVERNMENT,

KANSAS CITY, Mo., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I beg leave to report as follows with respect to immigration work in the States of Kansas and Missouri during the year 1898.

In my report for the year 1897 I referred to the organization of County Free Land Clubs, with headquarters in the various county seats, and the object sought to be attained by the same, and beg to state that the experience of the year, so far as I am able to judge, justifies this action, and although no great results in removals have yet occurred, a very necessary and useful preliminary work has at least been accomplished. These club organizations have, in many cases, been active agents in the distribution of literature and information among the people. They have also rendered valuable assistance in the sending of delegations to visit our country and report on the same, thereby saving much expense, besides selecting a more suitable class of delegates than otherwise could have been done. The secretaries of these clubs, being sub-agents of the Department, become active in promoting the work of the State agent, and are often ably assisted by the other officers, whose selection is largely determined by the amount of personal interest they exhibit in the objects we have in view and by their knowledge of our country. So far a very large number (in the neighbourhood of 100 delegates) have been able to examine our lands and report to their clubs, almost all of them bringing back good reports, and some bringing products of the country with them for the purpose of exhibiting them to their friends and fellow clubmen. The published reports, in pamphlet form, of these delegations are now being placed in the hands of the clubs for distribution, and are much appreciated and likely to prove effective immigration literature.

During the year I have kept in touch with the club organizations by frequent visits, at the same time continuing to visit new points and form new clubs, thereby widening the work. I have also continued the practice of holding street meetings in the larger towns and cities on such days as are mostly chosen by farmers to come into these centres for purposes of business, and I am of the opinion, from considerable experience in this line, that no system coming to my knowledge so far can do the work of bringing the advantages of our country before such numbers of farmers, and also assist to place them in possession of literature, as cheaply and effectively as this one. It also has the advantage of settling all questions as they arise, as well as securing among the farmers themselves united action in the selection of delegates, &c.

In my report of last year I called attention to the large expense at that time imposed upon the removal of settlers and their effects to Western Canada from all points south, and the disposition shown by American railways to retard, as far as possible, removals from this country. In this important matter great concessions have been made in general conditions, as well as actual reductions in rates, as instanced by the car lot effects rate prevailing in 1897 of \$134 from Kansas City to common points on Edmonton line, now reduced to \$98.50, and on special dates to \$75.50, this proportion of reduction now extending to all Western Canada points. The conditions for handling delegations have also been greatly improved, so that it is now possible to use for our business homeseekers dates and rates to North Dakota and Minnesota points every month in the year, while before this year only late fall dates could be used for this class of work, and these had no value for us. The time return limit has also been extended, making it possible for our delegates now to have all the time needed for examining our

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country, and a round trip rate from Kansas City to the Canadian boundary put at \$26.95, instead of \$53.50, as in former years. Concessions on rates for return men are also being secured for future work ; all of which goes to show that when the American railway people perceive this movement north, and find business is offered, they are willing to meet it from a transportation standpoint, and on the whole would rather promote the work than lose the business. In this connection it may be added that the extension of the excursion system from the south and south-western part of this country to ours is expected in time to be as welcome and as much looked for as the present system adopted by Canadian railways in our own country by our people, and with greater success and results on account of the greater area and population reached.

Our exhibit of products at the Omaha Exposition this year was expected to take the place of State fairs in all adjacent territory, including my portion, so that results arising from that may be felt during the coming year. In consequence of this no local State exhibits were made. It is now intimated that the exhibition will be continued at Omaha during the coming year, and further opportunities will present themselves for showing our products. It is also expected that Kansas City will hold an important agricultural show during the next season in the lately erected Convention Hall, which is of extensive proportions. Already space has been asked for and granted, but the details are yet to be arranged, by which we can reach all the territory tributary to such an important and attractive point as Kansas City is rapidly becoming. From an immigration standpoint all that is required for this exhibit will be the productions of the prairie where free homes are offered.

As the result of advertising through the press I am daily in receipt of correspondence from all parts of the south and south-west, and give this class of expenditure a first place. I am of the opinion it should be greatly extended.

During the year I have been able to send from various parts quite a number of settlers into our North-West country, of whom no record could be had up to the present, and who, therefore, are not credited in the immigration returns of the year, the reasons being that in quite a number of cases parties have driven into the country without holding certificates, or afterwards taking homesteads, either renting land for the year, or going into some line of business, or, in some cases, returning temporarily to their former homes. Another year it is presumed that the report will gather up the unreported for the previous year.

On the whole this next spring will show, I feel sure, considerable good results in removals, and this is as early as could be expected ; the correspondence, I would say, and reports from agents go to show this. Settlers who have gone in this year are reporting favourably, notably one of them, Mr. David Crozier, who went from Olathe, Kansas, in March last, and writes that himself and family are well satisfied with the change, and have raised, this year, almost ten thousand bushels of grain. His location is fifteen miles north-west of Edmonton. Already, as a result of his report, friends from Kansas and Missouri are settling around him. A Mr. Rood, from Metford, Missouri, reports much in the same strain, also many others.

I would like to call attention to a matter that seems to me important : that some provision should be made by which settlers who are desirous of moving to our country and would like to rent a farm for the first year, could be made aware of the location of lands to rent. I call attention to this from the fact that large numbers here desirous of moving, are afraid of getting over the first year, and if they could rent for the first year would gladly either buy or take homesteads later on.

In conclusion I would say that I am of the opinion that the possibilities are great of obtaining here a large number of settlers, thereby justifying the expense in advertising and such other work as may be done in this part of the United States.

I have the honour to be, Sir,

Your obedient servant,

JOHN S. CRAWFORD.



## No. 6.

## REPORT OF C. J. BROUGHTON.

1223 MONADNOCK BUILDING,

CHICAGO, ILL., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit my report of work done during the year 1898.

I have visited many towns in Illinois and Indiana, and had an exhibit of the grains and grasses of Western Canada at the following places: Springfield, Ill., Fort Wayne, Ind., Terre Haute, Ind. At Springfield thousands of people visited the exhibit, and we procured a large number of names of interested farmers, which have been sent to the Department and literature mailed. At Fort Wayne we were given a diploma by the committee and at Terre Haute the exhibit was well and highly spoken of. It was the means of drawing the attention of thousands of people to our magnificent western country, and from the close of the exhibition to the present time this office has been receiving letters from people who saw our display.

During the year there left this district for Manitoba and the West one hundred and four (104) people.

Some of their families accompanied them or have since gone (these are included in the 104) but there are yet to follow fifty people belonging to this lot. The war with Spain interfered with our getting many families; the young men having gone to the front, the parents decided to wait another year. I have the promise of thirty families to go next year. The people who have gone write glowing accounts of the country and are all satisfied, and urge their friends to follow them; they all say they had a far better year than they had for years where they came from, and this their first year.

The judicious advertising being done by the Department through Mr. Will. J. White, the Inspector of United States Agencies, is a great help to us, and keeps our country before the farmers all the time, and while perhaps fifty per cent of the inquiries we get do not at once bear fruit, it shows that the persons who make the inquiry are interested, and then it is only a matter of time until they finally decide to settle in Western Canada.

I have personally handed out about three thousand pamphlets and mailed a great many, have received and answered hundreds of letters and had personal interviews with hundreds of people.

Some of the people I have accompanied as far as St. Paul, others were met there by our representative, and all, with two exceptions, passed through Chicago and were met here. The geographical location of this district makes it necessary for settlers to pass through Chicago en route to the Canadian West, with perhaps the exception of people from one or two localities, and they must all be met here and properly transferred and ticketed. The people who go to Alberta are ticketed via Soo Line and Canadian Pacific Railway and those to Manitoba, via Great Northern to Gretna.

The outlook for our business in the future is grand, and if only half the people decide to go that are at present contemplating making their homes in Western Canada, we will show a vast increase over the movement of this year.

I have the honour to be, Sir,

Your obedient servant,

C. J. BROUGHTON.

# Department of the Interior.

No. 6 A.

## REPORT OF T. O. CURRIE.

STEVENS POINT, WIS., U.S.A., 28th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit my first full annual report on the emigration work in the United States. On the 22nd of January, 1898, by instructions from the Department, I opened an office in Stevens Point, Wisconsin. The scheme adopted by the Department for advertising brought in floods of correspondence, which kept us very busy answering, and visiting those people in different parts of the State, advising all not to start for the west before the latter part of March or commencement of April. When the time arrived that we considered best for them to go, some 22 people started on the 28th of March, reaching their destination safely. From that on we kept sending people almost weekly until the month of July. Over 2,400 people have corresponded with us and called on us personally to glean information in reference to our great North-West. I have endeavoured to see personally every individual in the State who has written to us for information, and have visited over 75 per cent of all those corresponding with us.

As you are aware, we made arrangements for giving a fine exhibit at the two State Fairs here, one at Chippewa Falls, the other at Milwaukee, and I am pleased to say that daily I hear of great praise of the products exhibited at those places, and believe them to be the greatest means of advertising that can be resorted to. On the 22nd of August, I received from the Department instructions to proceed to the Canadian North-west and then to return to Omaha, Nebraska, to assist at the fair there. I may here state that familiar as I am with agricultural views among the grand fields of golden grain in the old province of Ontario, and after having now seen the crops matured, or well so, in thirteen States of the American Union, I am bound to say that I was more than astonished at the tremendous products of the Canadian North-West. To look out of the car window on either side—one ocean of golden grain, or to drive across the country to see the lands, was most inspiring. I visited as many points as possible from Winnipeg to Edmonton, not losing a moment when I could either ride or drive, and gleaned all the information I could in reference to the agricultural resources of that vast territory.

Returning to Omaha on the 13th of September, I found there Mr. Bennett, your agent, and Mr. Duncan faithfully engaged in emigration work and both untiring in their energies in showing to the best advantage our exhibit. Permit me to say here that Canadians who have not travelled west can never realize what Canada has contributed to the development of the Western States. For many days while I was at the Omaha exhibit, more than one-half of the people who visited that fair, either themselves or their parents, were born in Canada, and I am fully satisfied that very many of these people will emigrate from the State of Nebraska and other States to our Canadian North-West through the influence of that exhibit. The people of the Western States know more about Canada to-day than they ever have known before. You will no doubt be surprised to hear that very many who visited our exhibit of fruit stood with astonishment and asked us if it was grown in hot-houses! They were of the opinion that we only had about two months summer in any part of the Dominion. How such erroneous ideas can be formed I cannot tell, but they are entertained by people in the Western States, and it requires a good deal of hard work on the part of the agents to dispel such ideas.

There was distributed in this State to people who were anxious to receive them, something over twenty-four boxes of literature. We have been able in the short time we have been at work, with the assistance of local agents that we appointed, to send some 227 people to the North-West, and two families were sent to the province of Ontario. The heads of families out of the number named took with them cash ranging from \$250 to \$5,000, besides a number of carloads of household effects, farm implements and stock.

The prospect of emigration for the coming spring and summer looks to be five times greater at least than it was a year ago. The inquiries are of a different nature. A number of men have sold out and are determined to move in the spring. But we are not without strong opposition in the State of Wisconsin. The people are kind, courteous and generous. The great railroad companies in this State and in the west do everything in their power to keep their people home. The Wisconsin Central Railroad owns thousands of acres of land in this State. The Great Northern and Northern Pacific run very cheap rates from here into Minnesota, the Dakotas and Montana, and when they hear of any one selling out and learn that we are after them, they follow us almost day and night. They also endeavour to secure the services of any good agents we may have, I believe, by offering them better inducements than it is possible for us to offer.

All these things to contend with make the work anything but easy or pleasant at times. Nevertheless we sincerely hope that our coming year's efforts will be crowned with good success.

I am, Sir,

Your obedient servant,

T. O. CURRIE.

# Department of the Interior.

No. 7.

## REPORT OF BENJAMIN DAVIS.

154 EAST THIRD STREET,

ST. PAUL MINN., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—It is now one year since I submitted my first general report of proceedings relating to emigration from this State and Northern Iowa to Western Canada.

You will have learned from the weekly reports forwarded to you as Superintendent of Immigration, how my time and that of the staff of the St. Paul office have been occupied, and the work we have been able to accomplish.

Inquirers can at all times procure desired information at the Canadian Government office, now established under my charge, at 154 East Third Street, St. Paul. The office is in a central place and has become well known, as is evidenced by the number of callers, and of settlers sent direct from it to our North-West.

The very great prejudice which I found among the people of this country when I first began the work, arising out of reports of extreme cold and early frosts in Western Canada, has in a large measure been overcome. This has been accomplished largely by sending delegates from different localities to spy out the land for themselves, who report to their friends and myself on their return, and by letters from settlers in Canada to their friends in this country. The delegates' reports have been sent to the Department of the Interior and printed in pamphlet form; these pamphlets have been extensively circulated through this State, and have produced most favourable results, especially in the neighbourhoods where the delegates reside, or are known personally. I have also received numbers of letters from farmers who emigrated to Western Canada and have taken homesteads there. These letters have a very beneficial effect and are displayed under glass on the counter of the office in St. Paul. Copies are also mailed to parties inquiring for information. These at once convince the skeptical or doubtful one that Western Canada possesses all that a farmer requires, and that the promises and information given in the pamphlets and by your agents are not overdrawn.

A change has been made with good effect in the mode of newspaper advertising, by placing it under the management of Mr. Will. J. White, who has taken all this extra work off your agents' shoulders, allowing them all their time to sow the seed of emigration. The mode of distributing literature has also been improved, as per directions from the Department. Formerly I mailed all literature descriptive of Western Canada from this office; now I send the names and addresses to the Department, where the matter is mailed, thus saving a large amount of postage.

The plan of holding meetings and addressing the people through my territory is being carried out; also of making personal visits to farmers' homes.

This office has now been open for twenty months, and the results I trust will meet with your approval. The first eight months I sent some eighty-three settlers and six delegates; since December, 1897, I have sent from my territory 359 settlers and forty-nine delegates. The settlers have taken claims in different localities, no discriminating as to locality being made by your agents. The chief places where they settled are the districts of Lake Dauphin, Swan River, Duck Mountain, and Virden in Manitoba; Yorkton and Alameda in Assiniboia; along the line of railroad in the Saskatchewan territory near Prince Albert, and between Calgary and Edmonton in Alberta. Each of these territories received about an equal number of settlers from this State.

I have made some changes in the personnel of the sub-agents where I found a change would be beneficial.

The exhibits of Western Canada's products shown at the Minnesota State and County Fairs have been productive of results far beyond anything predicted, and convinced thousands that the Canadian Free Government Lands of Western Canada can not be surpassed on the continent. Besides the large and tastefully displayed grains, threshed and in the straw, we exhibited vegetables from Manitoba and the Territories, which were pronounced by visitors to be superior to anything else shown in the same line. The surprise of many was a pleasure to witness. We also distributed thousands of pamphlets giving good descriptive accounts of the lands where these exhibits were produced.

After the State Fair, the exhibit was divided into four parts, each being in charge of an agent to attend the county fairs, Mr Edward T. Holmes having one, Mr. J. H. M. Parker, of Duluth, one, I took charge of one, and Mr. C. W. Speers, of Griswold, Manitoba, taking one, and attending a fair at Rochester, Minnesota, after which he went to Milwaukee to attend the State Fair there. I take this opportunity of expressing my thanks to Mr. Speers for the able assistance he gave me at the Minnesota State Fair, also the help, work and advice of Mr. Will. J. White were highly appreciated. This year we were not obliged to hire any decorators, as we have become artists in the way of exhibiting land products from actual experience. Photographs of this exhibit were taken, and forwarded to the Department of the Interior, and others interested. Mr. David R. McGinnis, one of the leading officials of the State Fair, stated that the Canadian exhibit was one of the finest displays and the quickest piece of artistic work he had ever seen. We exhibited at fifteen County Fairs and distributed thousands of pamphlets and packages of threshed grains. The benefit derived from these county fairs cannot be estimated. I am continually receiving letters requesting further information regarding Western Canada from parties who have been fortunate enough to see the exhibits, and from people who have heard from others what they had seen. This plan of advertising is a good one, and should be followed up every year. The farmers like to see and handle the products and compare them with their own.

The prospect of a large emigration from my territory next spring and fall is most encouraging. I expect to send ten times the number sent last year. This belief is formed from the number of farmers who are now preparing to move in the spring. From two localities 200 families are now making arrangements to emigrate to Alberta and Manitoba; some of them may change their minds and locate in Assiniboia and Saskatchewan. Each of the sub-agents report from five to ten families from their localities ready to move in the spring. I have forty-three sub-agents working in different localities in this State and Northern Iowa.

Mr. Ed. T. Holmes, whom you sent to assist me in the work of emigration, arrived on the 7th of April, 1898. After being in the office in St. Paul some three weeks to make himself efficient in the working thereof and the mode of procedure, he took up the work of travelling through this State and Northern Iowa, and has visited nearly all the counties south and south-west of St. Paul. He has done fine work, being in a position to talk to the people from actual experience, having visited Western Canada and paid strict attention to what came under his observation while there. He travels all the time, coming to St. Paul occasionally when necessary. Besides his weekly report you will receive a general one up to December 31st, from him.

The number of letters received at this office during the year, requiring information, and answered was . . . . .	3,500
Number of fairs where we exhibited Western Canada products . . . . .	15
Number of names and addresses secured at these fairs . . . .	3,747
Number of names and addresses received in answer for request of such on list inclosed in return stamped envelope . . . .	8,359
Packages of threshed grain given to visitors personally . . . .	5,672
Pamphlets distributed at fairs . . . . .	11,241

## Department of the Interior.

Number of pamphlets mailed from this office up to November 9th (at which time I received orders from the Department to discontinue doing so, but to forward names and addresses, and literature would be mailed from Ottawa).....	105,000
Number of pamphlets handed to visitors in this office.....	5,173
Pamphlets sent by express and freight from this office to sub-agents.....	23,000
Number of visitors calling at this office for general information	1,756
Delegates sent to Western Canada.....	49
Settlers from this office to whom certificates were given....	200

### SETTLERS SENT BY SUB-AGENTS.

J. H. M. Parker, Duluth, Minn.....	119
Chas. S. Marden, Barnesville, Minn.....	7
Alley and Konzen, Hallock, Minn.....	5
A. L. Anderson, Milaca, Minn.....	7
Alex. Williams, Willmar, Minn.....	3
Geo. Thompson, Boyden, Iowa.....	18
Total.....	359

Trusting this report will enable you to form a good idea of the work being done in this office,

I have the honour to be, Sir,

Your obedient servant,

BENJAMIN DAVIES.

## No. 8.

## REPORT OF ED. T. HOLMES.

154 EAST THIRD STREET,

ST. PAUL, MINN., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I take very much pleasure in submitting a report of my work as Travelling Emigration Agent in the State of Minnesota, from April 1st, 1898, to date.

Acting upon instructions received from the Department I proceeded to Minnesota and reported at the St. Paul office on 6th April. Was very kindly received by Mr. Davies and assured that my arrival was most opportune, it being one of the excursion days and a number of people were in the office from different parts of the State. I assisted Mr. Davies in having them comfortably started on their journey. Mr. Davies advised me to remain in the office for a few weeks in order to acquaint myself with the way in which the work is carried on. I did so, remaining three weeks, during which time I read carefully all printed matter dealing with Western Canada homestead lands, the rules and regulations for settlers, &c., also became familiar with the freight and passenger rates from St. Paul to different points in Western Canada.

I was then given a book in which the names of all parties who have written the St. Paul office for information regarding Canadian homesteads were recorded. This book is indexed under the name of the town, and is of very great assistance to me. Upon my arrival at each town, I have only to look up the names appearing under this town. I take a quantity of advertising matter with me for distribution, also lithograph hangers, which I hang in the post-office, blacksmith shop and other places where they will be sure to meet the eye of the farmer.

Early in May I accompanied a party of settlers to Alberta. I drove over a good deal of the country and talked with the farmers, getting much valuable information from them.

During September and October I attended 6 County Fairs, taking with me an exhibit of the products of Western Canada, also a supply of literature, which was distributed to those interested in free homesteads. At each of these fairs I secured a number of names, copies of which have already been sent to the Department. These exhibits at the different county fairs throughout the State have advertised Western Canada as well as newspaper advertising would do. Here the farmer saw for himself what could be raised in the country, and took away a small sample of threshed grain to show his neighbours. I find in travelling from town to town that those who did not see the Canadian exhibit, had heard of it and also of the 160 acres of Free Government Land.

I have travelled over the greater part of Southern Minnesota and Northern Iowa, where land is very valuable and the farmer with growing sons finds it impossible to buy farms for them, also where I find a great many renters. After spending a day or so in a locality in which I find this to be the case, I suggest to one or two of the most reliable, their taking a trip to Canada to inspect the country and report to their neighbours upon their return. This offer is eagerly seized upon, and I leave a requisition for the two delegates to be signed by 25 or 30 interested farmers. This when duly signed is forwarded to the office at St. Paul, and the matter of free transportation for said delegates taken up with the Department or Mr. McCreary. In few cases have delegates returned without having bought or homesteaded land. When these delegates

## Department of the Interior.

return, they write a short report of their trip, copies of which are sent to the Department from time to time, and are also published in their local paper.

A few weeks after their return I write, stating that I intend holding a meeting in their vicinity shortly, and ask their assistance in advertising the same. I get out some dodgers announcing date of meeting and have them distributed amongst farmers. A good number attend these meetings, and I tell them what Canada has to offer to good farmers, and call upon their neighbours, who have visited Western Canada recently, to corroborate my statements. Questions are asked by the farmers, and I find the delegates are pretty well able to answer all such, and I have yet to meet with one who has returned not well pleased with Western Canada as an agricultural country.

Whenever I can conveniently do so I attend such sales of farms, farm stock and implements as I see advertised, and take this opportunity of advertising Western Canada's advantages to the farmer.

In conclusion, allow me to say that although I consider the prospect for a large emigration the coming year very encouraging, it is very hard to make any actual estimate as to the number. It will be readily understood that it takes time for a farmer to dispose satisfactorily of his effects in this country and move into a new one. At the same time, from my personal observation, and from conversation with hundreds of Minnesota farmers, let me say that the reports of the delegates, and the exhibits at county fairs, together with the letters received from settlers in Western Canada, will have the desired effect, and that emigration to the Free Government Lands of Canada will be such as to place the success of the immigration branch of the Department beyond question.

I have the honour to be, Sir,

Your obedient servant,

ED. T. HOLMES.



No. 9.

## REPORT OF W. V. BENNETT.

OMAHA, NEBRASKA, U.S.A., 1st January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—You will find the number of persons who have located in Manitoba and the North-West Territories during the year of 1898 through the efforts and work done by the office here to be 296. I had six persons from Crete, and seventeen from Waverly, Neb., who went overland to Alberta, whom I have no account of, making twenty-three persons, and the nineteen persons from Russia who came over in October and November, 1898, through the influence of Special Agent T. Heinz, of Mission Hill, S.D., make a total of 338 of whom we have knowledge, with a capital of \$173,995. It was impossible for me to find out what capital some had.

I am, Sir,

Yours respectfully,

W. V. BENNETT.

# Department of the Interior.

No. 10.

## REPORT OF W. H. ROGERS.

CANADIAN GOVERNMENT AGENCY,

WATERTOWN, S.D., U.S.A., 11th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—In submitting my report for 1898, I shall as per request, aim to be brief, and will arrange it under the following heads, viz:—I. Plan of work, II. Results and III. Prospects for 1899.

I. The plan of work which I have found the most successful is, first, to get the people interested in the Canadian North-West by placing in their hands the best available literature relating thereto. To deepen this interest I encourage correspondence and forward to them betimes the reports of those who have visited, or better, lived in the country. When they are, as far as possible, "ripe," I arrange for a personal interview.

II. My own fifteen years residence in the country enables me to correct the many erroneous ideas abroad as to the length and severity of the winters, damage by frost, &c., &c., and at the same time to point out the superior advantages our country possesses and offers to honest toil and capital. To this I largely attribute my success.

During the year over three hundred persons, with thirty-one cars of effects, moved to Manitoba and the Territories from this State. All who knew definitely, before leaving, where they would settle, including all who took cars of effects, together with others who have written me since their arrival in the country, I can locate. But a number who intended visiting different districts before selecting the most desirable spot have not reported to me, and so I have no means of knowing their whereabouts. Besides these who have moved, eighteen delegates, representing quite a number of families, and thirty other land seekers, visited the country and with but few exceptions, brought or sent back favourable reports.

III. Last year is acknowledged to have been the best in the history of South Dakota. Because of this fact many, with whom the wish was father to the thought, prophesied that my work in this State would soon terminate. But that the prospects for 1899 are good will readily be seen when I state that at the present writing, I have seventy persons with twenty cars with effects ready to move early in the spring. I am trying to arrange to have all go together in one train load, and from the correspondence I am receiving, there is every reason to believe that the number going will be increased considerably during the next few months.

Very truly,

W. H. ROGERS.

No. 11.

REPORT OF W. RITCHIE.

GRAFTON, N.D., U.S.A., 1st January, 1899

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you the result in 1898 of work done in North Dakota.

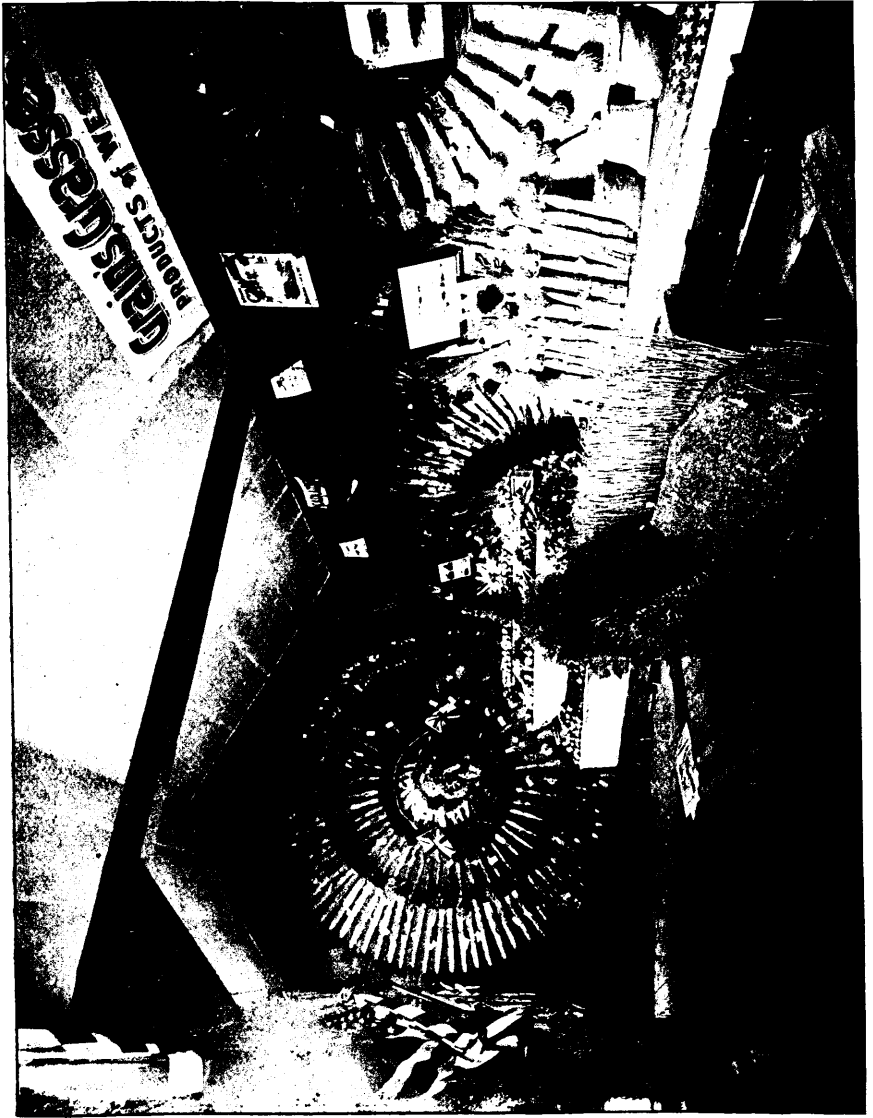
The total number of settlers that have left North Dakota for Western Canada was 679, and at a low estimate the value of effects taken by them would be \$125 per head.

A large number of farmers have driven over into Manitoba and taken up land, and will move on to their farms next year. None of these people are included in the above report, but will show up in report for 1899.

I have the honour to be, Sir,

Your obedient servant,

WM. RITCHIE



A WESTERN CANADA EXHIBIT AT A U. S. FAIR.

# Department of the Interior.

No. 12.

REPORT OF J. H. M. PARKER.

CANADIAN GOVERNMENT AGENCY,

DULUTH, MINN., U.S.A., 31st December, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—In submitting my report for the past year, I will touch briefly on my mode of working, the work done and the prospects for immigration in 1899.

I have canvassed the territory under my charge from house to house, with few omissions, in order to get before the people. I have also held meetings and lectured at the following places: Cloquet and Barnum in Carlton Co., Pine City and Mission Creek in Pine County, Rush City, Cassago Co., Minn.; West Superior and South Superior in Douglas Co., Wisconsin. Mr. Holmes, Travelling Immigration Agent, made two tours through a portion of my territory with me, and this was of considerable assistance to me. He also accompanied a colony of my settlers to Alberta, where he saw them located on lands. I also accompanied a colony of settlers to Alberta and a delegation. The colony settled around Edmonton and Wetaskiwin.

I exhibited grains and grasses from Western Canada at the St. Louis County Fair, held at Duluth, at the Pine County Fair, held at Pine City, and at the Sibley County Fair, held at Arlington. The exhibit at each place attracted a great deal of attention, particularly the wheat, which far excels the best that is raised in Minnesota. I distributed pamphlets and small samples of this wheat to all the principal farmers, and secured a great many names.

The immigration I sent to Western Canada the past year consisted of:—

Male adults . . . . .	75
Female adults . . . . .	15
Children, male and female . . . . .	29
Total . . . . .	119

The above settlers took with them five cars of implements, &c., and about \$3,000 in cash that I know of.

I sent a delegate, Mr. F. M. Ford, from Cloquet, Minn., who visited Alberta and the Swan River districts. He was very much pleased with the latter place, where he picked out land for a large colony that will go in the spring.

There will be a large immigration from this place in the spring, owing to the impossibility of raising a good crop here. The land is very rough and poor, besides being a bad climate for farming. I have already recorded over 150 farmers who say they are going next spring and summer. I shall advertise an excursion to Western Canada for the 15th April next, and hope to have a large colony ready for that date.

I have the honour to be, Sir,

Your obedient servant,

J. H. M. PARKER,

*Agent.*

## No. 13.

## REPORT OF REV. R. A. BURRISS.

PORT ARTHUR, Ontario, 29th November, 1898.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit my first annual report of immigration work done on Rainy River, Ontario.

On the first of February last I was commissioned as immigration agent by your Department to secure settlers from the United States for the Rainy River Valley of Western Ontario.

I immediately started from my home at Bowmanville, Ontario, on an exploration trip. This region had been recommended to me as suitable for settlement. I left Rat Portage, going up Rainy River to Fort Frances.

I spent over a week looking out a good location for a colony. I found the people very kind and anxious to answer questions regarding the valley. I found the valley to be exceptionally fertile and well adapted to agricultural purposes. I recrossed the lake to Rat Portage, feeling satisfied with the location.

I next applied to the Crown Lands Department at Toronto for a special survey of a township, which was granted, and the survey made and completed by the 15th of May, ready for my first settlers. These settlers came from all points in the United States; some from as far west as California and Oregon.

My work was very much hampered for the want of roads. We found no road into this township. Every thing that was taken in had to be carried on the shoulders for five miles through the brush. Many of the new settlers rented farms; some of them forced themselves into their claims and went to work. The Crown Lands Department at Toronto at once commenced their colonization road work, and within eight weeks we had a road.

These settlers are of the better class from the States. I secured their attention by writing articles for religious papers, showing the advantages that poor renting farmers might have in this locality. I desired to move cautiously. I invited men alone to come, leaving their families behind until claims had been selected and houses erected. Without a single exception every man declared himself pleased with the soil, water, and advantages offered.

Fifty-seven heads of families have each taken quarter section claims in Burriss Township, amounting to *nine thousand six hundred and twenty acres*. A town site has been plotted, covering forty acres in the centre of the township, and nearly three-fourths of the lots sold. This town is to be called Christiana. The Crown Lands Department at Toronto made a free grant of the forty acres for the town plot. We then formed a town council, and the land has been turned over to them. The money from the lots will be appropriated to street making and in otherwise beautifying the place. The survey will be made in the spring. A boarding house is now on the ground, and a place of worship. We will establish a stage line and a post office next spring.

Seven quarter sections have been taken by my people in Carpenter Township, which lies to the west of Burriss. Several lots have been taken in Devlin and Barwick Townships. Two improved river front farms of 330 and 335 acres have been purchased, and are resided upon. Most of these people are practical farmers; they are honest, industrious, sober citizens. No more valuable class of people could be secured.

## Department of the Interior.

The difficulties with which I have had to contend in the opening of this work have greatly disappeared. I have certificates issued for about 100 heads of families for the opening of navigation in the spring. With these will come the families of the men who came in this summer. I would not be surprised to see five hundred heads of families come to Rainy River Valley next year. The prospect is most promising. By the time the Ontario and Rainy River Railway is completed I feel quite confident that most of this valuable agricultural land will have been taken.

I am now located in Port Arthur. The new railway starts from this point. Not only have they this valuable land on Rainy River, but before reaching that valley, the Ontario and Rainy River Railway passes through three or four hundred thousand acres of valuable land. In all we have in this locality now fully 1,000,000 acres of agricultural land. We do not count the mineral land. I do not believe there can be found a more favourable location to-day for men who desire free homes near a good market.

I have the honour to be, Sir,

Your obedient servant,

R. A. BURRISS.

## No. 14.

ANNUAL REPORT OF THE GENERAL AGENT OF THE COLONIZATION  
AND REPATRIATION SOCIETY IN THE  
PROVINCE OF QUEBEC.*(Translation.)*

MONTREAL, 2nd January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you the fifth annual report of the operations of the Society of Colonization and Repatriation of the Province of Quebec, to the work of which I am attached in the capacity of agent of immigration, under your Department.

This report does not differ at all, in its essential features, from those which have preceded it. It contains the renewed confirmation of the success which crowns the efforts of the society in the task undertaken at the beginning and kept up ever since with perseverance and energy.

The total number of colonists inscribed at the offices of the society during the twelve months of the year 1898, amounts to the satisfactory figure of 2,226, of whom 462 came from the United States. Their destinations were as follows:—

Labelle district.....	1,200
Lake Temiscamingue.....	263
Lake St. John .....	572
Valley of the Matapedia.....	89
Northern Ontario.....	95
Western Canada.....	7
Total.....	<u>2,226</u>

I have already drawn attention to the fact that these figures do not give a complete idea of the results obtained by the society, whose work of propagandism is carried out in Canada, in the United States, and even in Europe. Thus, only the smallest proportion of the colonists furnished by the old parishes come to enter at our offices; the greater number, leaving the districts bordering the townships to which they direct themselves, go straight to their destinations. The approaching decennial census alone can make manifest the exact results of our work.

It is the Canadians who have gone out of the country whom the lectures and other methods of the propaganda are mainly designed to influence, and to bring back to the country. Only a small proportion of such people, however, come to enter at our offices, namely, those destined for settlement on the wooded lands of the province. The others go directly to their destinations.

The repatriation movement is real; it increases from day to day, but its true proportions will not be known until the next general census. The railway agents in the United States have an approximate idea of the extent of the return movement, and the figures which they furnish are simply astonishing.

We are far from wishing to claim all the credit of their work, but the legitimate share due to our Colonization Society is not inconsiderable.

To better understand and appreciate the special work to which the society devotes itself, it should be remembered that its primary object is to put a drag on emigration, by the adoption and making commonly known of better methods of colonization, and, in



## Department of the Interior.

the second place, it seeks to bring back to the country those who have unfortunately left it.

The society this year projected and realized the holding of a colonization congress, destined to make an epoch in its annals. Persons well known for their interest in and personal knowledge of the subject of colonization came from all directions at the invitation of the society and contributed to the success of the congress.

One of the most immediate and tangible results of the congress has been the organization of several colonization societies, whose zeal and efficiency are beyond praise. To the best of its ability our society encourages and favours these sister institutions, believing them to be capable of accomplishing a great deal of good.

It has been generally admitted that the question of colonization, from the point of view of the province of Quebec, is not extremely difficult of solution. The whole matter simply resolves itself into a question of road communication; so clearly is this the case that one can see the number of colonists diminish or increase in any colonization district, according as the opening up of roads is pushed forward with less or more activity.

From every Canadian family, in the old parishes where the lands are fully occupied, there are constantly coming out swarms of young people, whose real vocation is the cultivation of the soil, and who, many of them, are well enough disposed to follow it, but whom the slow methods of colonization or the want of encouragement impel fatally towards the cities of Canada and the United States, where they vegetate miserably. It is part of our work to encourage these young men to claim their share in the common patrimony which we Canadians possess in the yet unsettled portions of the province of Quebec, and in the fertile plains of Western Canada, where a few years of work will lead them to independence, and where thousands or millions, if need be, of such young men can be accommodated as settlers. The other division of our work is, as indicated above, to bring back those who having spent some time away from the country, ask nothing better than that they may return.

Convinced of the excellence of these objects and of the work accomplished by our society, I have the honour to solicit in its name the continuance of the grants with which it has been favoured since its incorporation, grants which are absolutely necessary to enable it to carry out its mission.

I am, Sir,

Your obedient servant,

T. A. BRISSON,  
*General Agent of the Colonization Society, Montreal*

## No. 15.

## REPORT OF THE REVEREND FATHER MORIN.

*(Translation.)*

MONTREAL, 14th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you my eighth annual report on my work of colonization and repatriation in the district of Edmonton, Alberta.

Our French-Canadian colonies continue to progress ; new families arrive among us, I might say every week ; the Canadian Pacific Railway Company finds purchasers for its lands, and the homesteads are all taken within a radius of 20 to 25 miles from the town.

As a result of my two journeys in the Eastern United States, I was enabled to bring back about thirty families who have settled in the different Canadian centres of the district ; a larger number followed during the summer and others are preparing to come next spring.

The harvest has been good, the yield of grain has given satisfaction, and my colonists are content with the results of their work. The tables which accompany this report will enable you to see the details of the operations carried on in the colony during the last twelve months.

Several delegations have come to us from the United States, and from the other provinces of Canada. To all I rendered the required services, letting them see the advantages of the country, but also the drawbacks which are necessarily encountered in every new settlement.

After reading pamphlets treating of the North-West there are people whose enthusiasm is easily aroused, who, without consulting their purse, or even their aptitude sometimes, set forth for the prairie and choose their homestead, completely ignoring the prudential principles which should guide the beginner in a new career. Soon enthusiasm gives place to disenchantment and they reflect, too late, that even on a wholly cleared land, received gratuitously, there are required farm-stock, seed grain, provisions, some kind of outbuildings, in a word a small capital to begin with.

Here is the explanation of the fact that certain families have not remained in Alberta, although they had taken up land there. Unfortunately, these families who had come so rashly, will speak unfavourably of the country on their return home. It is disagreeable to have to avow that one has not the requisite qualities to make a good agriculturist, or to say that one is too poor to provide the necessaries for setting up an establishment, and, as there must be a fault somewhere, it is easiest to blame the colonization agents, or the country, therefore they do so with a light heart ; but we are not much the worse for it.

As regards the practical farmers, who came with some little capital, I may say that not one of them thinks of abandoning his farm ; all have faith in the future of the country and work zealously to develop its resources. The district of Edmonton, whatever may be said, will always be thoroughly suitable for mixed farming ; the raising of cattle and the cultivation of grain in a measured proportion. The fertility of the soil and the still unoccupied great prairies offer exceptional advantages for these two industries.

The surface wells dug with the spade do not any longer suffice, on account of the considerable growth of the herds of cattle. These wells are now supplemented in many places by artesian wells 50 to 100 feet deep, which give abundant water, good for every

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kind of use. The drawback is that the artesian wells are so expensive, particularly for the new arrivals who have so many expenditures to make.

The colony possesses a weekly publication which is a great help to us. *L'Ouest Canadien*, published at Edmonton, contains every week correspondence and other matter relating to the resources and advantages of the country. The editor, Mr. Frederick Villeneuve, recently elected to represent the district of St. Albert in the Legislature at Regina, is in thorough sympathy with our work of colonization.

We were rejoiced to see work begun on the bridge over the Saskatchewan at Edmonton. The contractor for the piers finished his work months ago, and the tenders for the superstructure, I understand, have been received.

Comfort and prosperity begin to penetrate into our colony, the houses are more stylish, gardens have been made, the roads have been improved and are more used, the herds increase, the fields become larger, the agricultural implements of the inhabitants show great improvement and a spirit of progress. At this season of the year, when the colonists are engaged in carting their grain to the town, one remarks a scarcely interrupted series of fine and strongly built vehicles. The settler, wrapped in his warm overcoat of fur, nonchalantly smoking his pipe, seated on his load of wheat, drawn by a team of large and fat horses splendidly harnessed, seems to be—and is he not, it cannot be contradicted, the happiest of mortals?

The value of property has increased 25 per cent since last year; the continued arrival of new families has reduced the number of available homesteads, and at present a large number of colonists prefer to pay more and buy either from the Canadian Pacific Railway Company or from individuals, lands situated in the organized centres, where there is a post office, a church, schools, shops, &c., rather than avail themselves of the more distant free grant lands.

It would be a great improvement if all the colonies were united by a telephone line, as are Morinville and St. Albert with Edmonton.

I am not an advocate of grants to colonists in the form of bonuses, premiums, &c. This often encourages the immigration of people who are little fitted for the cultivation of land. But to a *bona-fide* colonist, married and father of a family, who comes here intending to earn his living by cultivating the soil, and determined to make Alberta his country and that of his family, I should have pleasure in seeing the Government pay back to this true pioneer, after a year of residence, all the money spent in the transportation of himself and his family.

I could furnish the names of more than five hundred families who have manifested a desire to come and take up homesteads or buy land in our new colonies, but the high price of the journey has prevented these worthy people realizing their patriotic project. When from thirty to forty dollars have to be paid per ticket from the Eastern United States to Edmonton, calculate what the transportation of a family of from ten to a dozen members would come to, obliged to pay half-price for children from five to twelve years old. The sum paid by some families to the railway companies often represents the whole earnings of the entire family for two years.

A new coal mine is being worked in the colony of Morinville. Mr. Hedwidge Chevigny while digging for a well found at a depth of 4 feet a bed of coal 12 feet thick. This combustible is very good for heating houses and for forges, and sells at one dollar per ton, delivered at the house. The mineral had been noticed in different places but we were far from hoping to find a mine in the middle of the prairie, about three miles from Morinville village.

The health of the colonists is excellent, the salubrity of the climate promises them many years of life; this year there have been a dozen deaths, due for the greater part to imprudence which has brought about accidents. On the other hand, we have greeted the birth of 125 fine babies, who already cry—for their homesteads.

The eyes of the population are turned towards Edmonton, undoubtedly the town of progress. Situated as it is in the centre of an agricultural district having a radius of fifty miles, we are ambitious that our metropolis should have a brilliant future. It is hoped that colonists may continue to be sent to us, that the country may become peopled, that the district will develop, and that we shall see the town prosper, grow and become

one of the principal towns of the Dominion, the emporium of the north, the capital of a new province.

It is an anxious question as to what direction will be taken by the railway as soon as the bridge over the great river is completed. Riviere qui Barre and Morinville dispute as to which shall have the privilege of having it within its limits. In any case, it is conceded by all that in the first place the railroad line will go to St. Albert and from there will be directed towards the great River Athabasca; to cross it either at Landing, or perhaps at old Fort Assiniboine, and then continue towards the west of the continent.

The extension of this line will assure us a magnificent market for our meat, agricultural and milk products. At present, in the actual state of things, the products of Manitoba, though some hundreds of miles further off, enter into ruinous competition with us in the British Columbian markets, above all in the district of Kootenay. The freight rates on the Calgary and Edmonton are not of a nature to encourage exports.

Gold continues to be found in the bed of the Saskatchewan. Dredges of different kinds, size and models, have worked all summer. The English company of which Chevalier Drolet is the promoter hopes to obtain good results.

We have begun two new settlements to the north of Morinville, the one to the east, the other to the west of the large Egg Lake. About twenty families are already settled on their homesteads and speak of sending for their relations and their friends to strengthen their respective colonies. In these two places there are various advantages, the prairie is not perfectly cleared and clean, but the clearing takes very little labour; on every homestead one can find about forty acres of land ready for ploughing.

Another colony is in the course of formation about a dozen miles to the north of Lamoureux, at the junction of the Sturgeon and the Creuse Rivers with the Grand Saskatchewan. Most of the families of this new colony come from the State of Minnesota. More than thirty homesteads are already entered for at the Lands Office and a large immigration to this place is expected next spring. The settlement is situated on the route to Victoria.

I have the pleasure of offering to you the result of a complete census of all the French-Canadian centres of the district; it is an irksome labour, long and fairly difficult, but I impose this task on myself on account of the satisfaction which it gives. By looking over the tables and comparing them with those of preceding years one can judge better of the progress and development of the colonies. The care which I have taken in gathering this information is a guarantee of the fidelity and exactness of the statement which I submit to you.

I offer my sincere thanks to the Canadian Pacific Railway for its good offices on my behalf; to the venerable missionaries of the North-West whose hospitality I have sometimes encroached on, to the officials of your Department for the courtesy with which they have always treated me; and above all to the employes of the Immigration Office in Montreal for the great and numerous services for which I am indebted to them.

In the course of this year, 1898, I have delivered 62 immigrants' certificates, I have received 568 letters, to which I replied by sending printed matter, pamphlets, &c., above all, copies of *L'Ouest Canadien*, giving besides more detailed information where desired.

I have made two journeys to the Eastern United States, visiting Lowell, Fall River, Providence, New Bedford, Woonsocket, Fitchburg, Worcester and other Canadian centres, where I had been asked to go and where I hoped to recruit families for our colonies. I made four journeys to the North-West, each time taking out families.

I have made the census of all the French-Canadian families in the district of Edmonton. On the 1st of January last the colony was composed of 620 families, settled in nine different centres: Edmonton, Morinville, St. Albert, Fort Saskatchewan, St. Pierre, Riviere qui Barre, Beaumont, Stony Plain and Vegreville; it is to these centres that new families direct themselves. The greater number have relations or friends who expect them and come to meet them at the station, which is not a slight service to render to me.

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The tables which accompany this report show an increase of eighty-three families over the census of last year. I must add, however, that there are nearly one hundred families who have recently arrived in the colonies and who have not yet chosen their place of settlement; in the table I have only written down the settled families, definitely established and determined to make Alberta their new home. I have not included the floating population.

We seeded this year, 1898, 12,000 acres of land,

which brought us in.....	100,000 bush. of wheat
	314,000 " " oats
	98,000 " " barley

Giving a total of more than.....	512,000 " " grain,
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without counting a hundred thousand bushels of fine and good vegetables.

Some fields have given as high as 100 bushels per acre. The manager of the farm of the Mission of St. Albert harvested 3,500 bushels of oats in 44 acres of land. Mr. Moise Constantin, of St. Pierre, 2,500 bushels of oats in 35 acres. Mr. Denis Hebert has had altogether about 5,000 bushels from 80 acres; this will tell you that the result fully satisfied everybody. The yield, nevertheless, is a little less than that of last year.

We have broken 9,000 acres of prairie, which added to the 12,000 already under cultivation, brings up to 21,000 the number of acres of land which we shall seed next spring.

The yield has varied a little, according to the kind of culture and the care given by the colonist. At the head of the list is:

St. Albert.....	113,875 bush. from	2,470 A. mean	46.2 per A.
Morinville.....	110,937 " "	2,500 " "	44.8 " "
Fort Saskatchewan.	92,624 " "	2,230 " "	41.9 " "
Rivière qui Barre..	55,844 " "	1,330 " "	41.11 " "
St. Pierre.....	50,155 " "	1,180 " "	34 " "
Stony Plain.....	45,311 " "	1,010 " "	44.5 " "
Beaumont.....	40,562 " "	1,080 " "	34.3 " "
Vegreville.....	4,668 " "	200 " "	23.8 " "
513,976 " "		11,990 " "	42.86 " "

The colony possesses a pretty considerable stock of animals and this stock is continually increasing.

Horses.....	2,150
Horned cattle.....	5,252
Sheep.....	2,466
Swine.....	3,900

which gives an increase of about 20 per cent over the preceding years.

Our population recruits itself a little from everywhere. There are in the colony families who have come from all the provinces of the Dominion and from the different States of the neighbouring Republic. We can class them in the following order:—

From.	Families.
France.....	20
Belgium.....	20
Switzerland.....	7
Quebec.....	120
Ontario.....	55
Manitoba.....	15

Carried forward.....	888
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From.	Families.
Brought forward .....	888
British Columbia .....	17
California .....	2
Connecticut .....	12
Dakota .....	20
Iowa .....	4
Kansas .....	43
Maine .....	28
Massachusetts .....	42
Missouri .....	2
Michigan .....	25
Minnesota .....	64
Montana .....	23
New Hampshire .....	5
New York .....	10
Pennsylvania .....	2
Rhode Island .....	18
Washington .....	2
Wisconsin .....	19
Vermont .....	10
In the country .....	35
<b>Grand total</b> .....	<b>620</b>

## RECAPITULATION.

Europe .....	47
United States .....	331
Canada .....	207
In the country .....	35
<b>Making a total of</b> .....	<b>620</b>

not counting about fifty families not yet settled.

These 620 families give a population of 2,479 souls, re-divided into 1,432 adults, 1,047 children ; of whom 1,347 are of the masculine sex and 1,132 are of the feminine sex.

## PRICES OF GOODS ON THE EDMONTON MARKET.

Flour, per 100 lbs .....	\$ 2 25 to \$ 2 50
Pork " " .....	5 50 to 6 00
Beef " " .....	5 00 to 6 00
Mutton " " .....	6 50 to 7 00
Butter, per lb. ....	18 to 20
Cheese " .....	10 to 12
Tea " .....	25 to 50
Coffee " .....	30 to 40
Rice " .....	6 to 7
Sugar " .....	7 to 8
Poultry " .....	9 to 10
Turkeys " .....	13 to 15
Eggs, per dozen .....	20 to 25
Coal oil, per gallon .....	40 to 50
Syrup " " .....	75 to 1 00

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### AGRICULTURAL IMPLEMENTS.

Plough, single .....	\$ 22 00	to	\$ 28 00
"    double .....	55 00	to	65 00
Seed drill .....	70 00	to	110 00
Mower .....	60 00	to	65 00
Rake .....	30 00	to	33 00
Reaper .....	80 00	to	100 00
Binder .....	135 00	to	140 00
Disc-harrow .....	35 00	to	38 00
Harrow .....	5 00	to	15 00
Waggon, double .....	70 00	to	80 00
"    light .....	50 00	to	60 00
Buggy .....	40 00	to	50 00
Sleigh .....	22 00	to	30 00
Harness, double .....	30 00	to	35 00
"    single .....	15 00	to	18 00
Binder twine .....	9	to	11
Barbed wire .....	3 25	to	3 50

### FARM ANIMALS.

Team horses, 2,000 lbs .....	\$100 00	to	\$130 00
"    ponies, 1,500 lbs .....	30 00	to	40 00
Milch cow .....	25 00	to	30 00
Yearling heifer .....	10 00	to	12 00
Store cattle, live per 100 lbs .....	2 50	to	3 00
Sheep yearlings .....	3 00	to	4 00
Pig (alive), 3 mos .....	3 00	to	4 00
Fowls, per couple .....	50	to	60

### SAWN WOOD.

Planking .....	\$ 18 00	to	\$ 22 00
Clapboards .....	20 00	to	25 00
Rough planking .....	12 00,	15 00 and	17 00
Shingles .....	2 00	to	2 80

### MISCELLANEOUS.

Tobacco, per lb. ....	\$ 25	to	\$ 50
Wool .....	6	to	7
Wheat, per bushel .....	44	to	46
Oats .....	20	to	22
Barley .....	20	to	22
Pease .....	1 00	to	1 10
Potatoes .....	20	to	22

These different prices are for the last week of December, 1898. Our market is not yet established; very marked changes sometimes occur in a very short time. These depend on the transportation facilities and on the more or less considerable importations of our merchants.

I have the honour to be, Sir,

Your obedient servant,

J. BTE. MORIN,  
*Priest.*

POPULATION.

COMPARATIVE STATEMENT for the Years 1896, 1897 and 1898.

	1896.	1897.	1898.
Families.....	428	537	620
Souls.....	1,987	2,122	2,479
Adults.....	1,183	1,305	1,422
Children.....	804	817	1,047
Masculine.....	1,201	1,196	1,347
Feminine.....	786	926	1,132

J. BTE. MORIN,  
*Priest.*

HARVESTS.

COMPARATIVE STATEMENT for the Years 1896, 1897 and 1898.

	1896.	1897.	1898.
Acres seeded.....	7,363	10,625	12,000
Bushels harvested.....	180,348	365,718	514,000
Mean yield.....	24.5	34.6	42.7
First ploughing.....	2,963	4,444	8,969

J. BTE. MORIN,  
*Priest.*

CATTLE.

COMPARATIVE STATEMENT for the Years 1896, 1897 and 1898.

	1896.	1897.	1898.
Horses.....	1,269	1,622	2,148
Horned Cattle.....	2,591	3,677	5,252
Sheep.....	1,210	1,454	2,466
Swine.....	1,774	2,048	3,900



## Department of the Interior.

### COMPARATIVE STATEMENT of the French-Canadian Colonies for the Years 1896, 1897 and 1898.

	1896.	1897.	1898.
Families.....	406	537	620
Souls.....	1,987	2,122	2,479
Adults.....	1,183	1,305	1,432
Children.....	804	817	1,047
Masculine.....	1,201	1,196	1,347
Feminine.....	786	926	1,132
Acres seeded.....	7,363	10,625	12,000
Acres ploughed.....	2,963	4,444	8,969
Bushels harvested.....	180,348	376,118	513,976
Average yield.....	24.5	34.6	42.8
Horses.....	1,269	1,622	2,148
Cattle.....	2,591	3,675	5,250
Sheep.....	1,210	1,454	3,000
Swine.....	1,774	2,048	3,802

J. BTE. MORIN,

*Priest.*

GENERAL CENSUS of the French-Canadians of the District of Edmonton.

Colonies.	NUMBER OF SOULS.					SETTLED ON		LIVE STOCK.				HARVESTED IN			ACRES OF LAND.			
	Families.	Total.	Adults.	Children.	Masculine.	Feminine.	Townships.	Ranges.	Horses.	Cattle.	Sheep.	Pigs.	Wheat.	Oats.	Barley.	Vegetables.	Cultivated.	Broken.
Fort Saskatchewan	123	732	259	173	242	190	54-55-56	22-23	427	1,190	975	650	20,875	45,937	25,812	4,200	2,230	2,164
Morinville	113	366	229	137	211	155	55-56-57	24 25-26	454	940	380	730	12,594	84,218	14,125	6,450	2,500	1,677
St. Albert	87	546	295	251	269	277	53-54	24 25-26	387	1,046	680	880	19,500	72,500	21,875	5,110	2,470	1,495
Edmonton	78	293	147	146	155	138	52	24-25	70	60	...	...	12,062	21,500	7,000	2,000	1,080	3,775
Beaumont	62	269	145	124	141	128	49-50	24-25	194	573	159	195	7,488	36,031	12,375	3,225	1,330	830
Rivière qui Barre	53	192	120	63	110	82	55-56	26-27	181	320	150	378	14,555	26,950	8,650	2,875	1,180	1,160
St. Pierre	47	153	86	57	85	68	53-54	26-27	210	508	115	360	11,220	26,375	7,716	2,680	1,010	715
Stony Plain	44	165	103	62	98	67	52-53	25-26-27	164	330	484	494	2,526	1,362	780	600	200	153
St. Vegreville	16	63	29	34	36	27	49-50	15-16	61	283	57	115	100,770	314,873	98,333	27,140	12,000	8,963
Total	620	2,479	1,432	1,047	1,347	1,132	.....	.....	2,148	5,250	3,000	3,802	100,770	314,873	98,333	27,140	12,000	8,963

J. BTE. MORIN,  
Priest.

Certified correct.

MONTREAL, 26th January, 1899.

Department of the Interior.

COMPARATIVE STATEMENT for 1896, 1897, 1898, of the French-Canadian Colonies of the District of Edmonton.

Colonies.	FAMILIES.		HORSES.		CATTLE.		GRAINS.		LAND SOWN.		FIRST BREAKING.		MEAN OF THE YIELD.									
	1896	1897	1896	1897	1896	1897	1896	1897	1896	1897	1896	1897	1896	1897								
	1898	1898	1898	1898	1898	1898	1898	1898	1898	1898	1898	1898	1898	1898								
Fort Saskatchewan.....	71	113	123	300	352	427	695	912	1,190	24,320	92,028	92,624	1,171	2,337	2,230	1,154	2,164	39	44	1	5	
Montville.....	82	100	113	290	333	454	500	656	940	60,000	77,800	110,937	1,970	2,330	2,500	1,075	1,677	33	34	4	4	
St. Albert.....	66	79	84	296	313	387	678	766	1,046	54,288	73,200	113,875	1,680	2,040	2,470	928	1,495	35	9	46	1	
Edmonton.....	45	58	78	20	38	70	25	40	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beaumont.....	41	51	62	48	141	194	98	331	573	6,900	20,600	40,562	1,184	676	1,080	184	775	30	5	37	5	
Rivière qui Barre.....	27	48	53	88	142	181	70	226	320	4,000	39,100	58,844	158	1,140	1,330	117	605	830	34	3	42	0
St. Pierre.....	35	45	47	130	153	210	400	420	508	12,000	39,530	50,155	500	1,100	1,180	248	216	1,160	35	9	42	5
Stony Plain.....	28	32	44	64	113	164	105	215	330	16,000	28,790	46,311	600	857	1,010	226	140	715	33	6	44	8
Vegreville.....	11	11	16	33	37	61	20	109	283	2,840	5,070	4,668	100	145	200	75	45	153	35	0	23	3
Total.....	406	537	620	1,269	1,622	2,148	2,591	3,675	5,250	180,348	376,118	513,976	7,363	10,625	12,000	2,963	4,444	8,969	35	4	42	8

J. BTE. MORIN,  
Priest.

Certified correct.  
MONTREAL, 26th January, 1899.

## No. 16.

## REPORT OF MR. C. O. SWANSON.

WATERVILLE, QUE., 10th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—I have the honour to submit to you the following report of immigration work done during the year of 1898.

I have made three trips to Alberta, in April, July and October, in charge of settlers' excursions.

Through advertising in different Scandinavian papers, we have had a large correspondence with parties asking for information in reference to free homesteads, &c., and in reply a large quantity of literature has been sent out from the head office by Mr. Akerlindh, and from Waterville by myself, and that, combined with several visits which I have made through different parts of the United States, has brought 309 persons to the North-West, most of whom have settled in North Alberta, taking with them 17 carloads of effects, cattle, &c.

I have had 71 persons come from Sweden and Norway, 17 of whom were servant girls who came out on prepaid tickets, sent by myself and paid for afterwards by the people with whom I placed the girls, after having them on trial for two weeks, recouping themselves by taking the amount out of the girls' wages at the rate of about one dollar a week. This branch of the work, of bringing out servant girls from Sweden and Norway, should be looked after far better than it is. Since it became known that I am doing something in this line, there is scarcely a day but I get letters from many parts of Canada asking for girls. As a general thing they give good satisfaction. These girls make good agents also, for after being here a time they are pretty sure to send back for some of their friends. Most of the immigrants I have had from Sweden this year have come through correspondence with some of these girls who have been here two or three years. Outside this the outlook for immigration from these countries for the coming year is not very encouraging.

But the Scandinavian immigration from the States for the future looks very encouraging, as many letters show which I have received.

When I go to Alberta on the excursions, after settling the people I have with me, I visit the people of the several colonies as far as I can. I find them doing very well and on the whole satisfied.

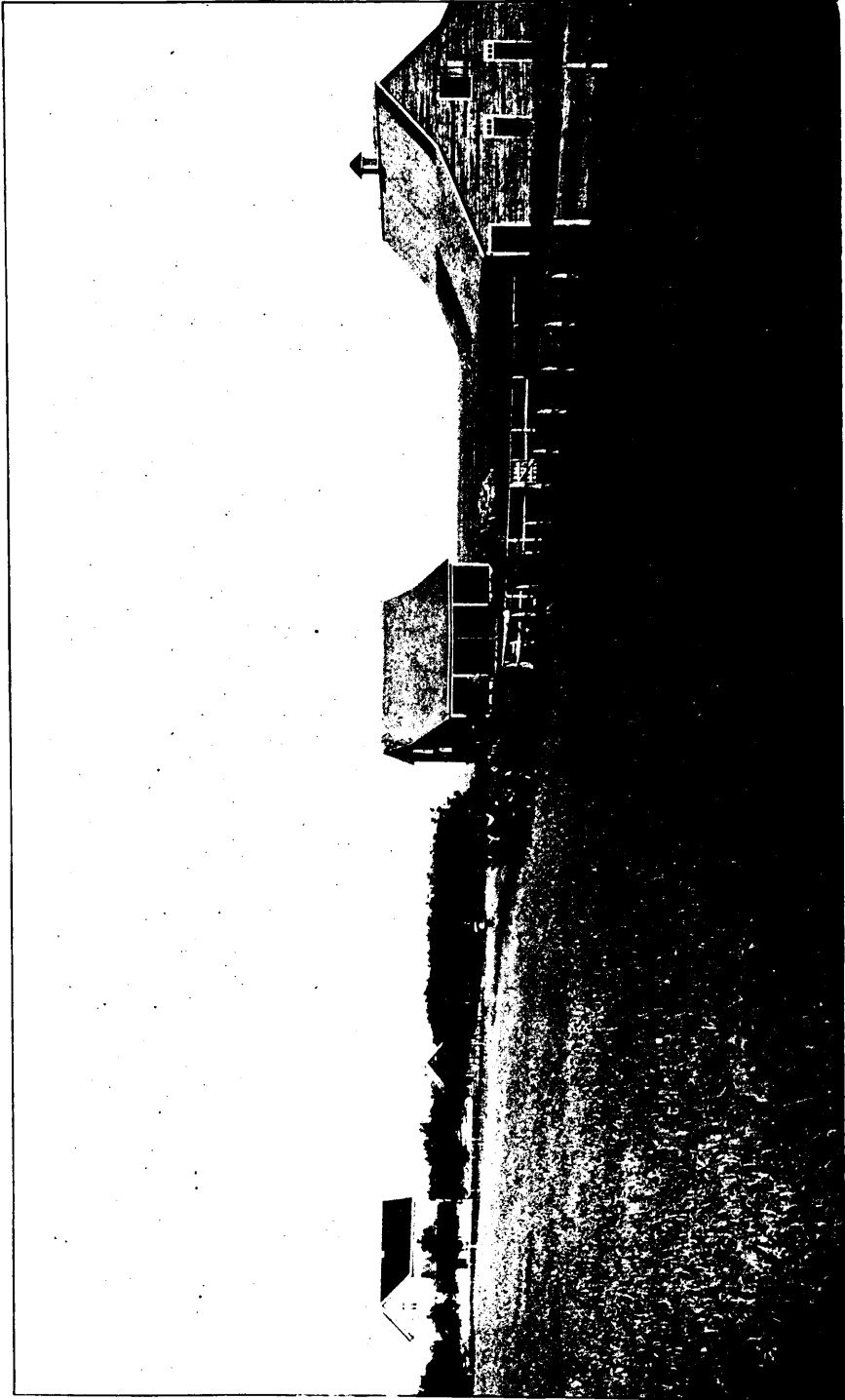
When I have made my trips I have got reports from the delegates who went with me, and on my last trip I got some good letters from settlers in favour of the country, which when printed will serve as good immigration literature.

In conclusion I wish to express my gratitude to the officials of both the Canadian Pacific Railway and Grand Trunk Railway Companies who have always shown me great kindness. Also to all the agencies that I have had to do with, especially the Montreal agency, for the help they have given me in looking after immigrants coming through from the New England States, and for transhipping settlers', effects, &c.

I remain,

Your obedient servant,

C. O. SWANSON.



A HOMESTEAD IN THE NORTH WEST.

# Department of the Interior.

No. 17.

REPORT OF REV. FATHER BLAIS.

(Translation.)

THREE RIVERS, 13th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—In accordance with the desire expressed to me in your circular dated 17th November last, I now proceed to give you a short account of the work which I have done while fulfilling the mission with which I was entrusted by my bishop, since the 3rd May, 1898, a mission which the Department made every effort to render successful and fruitful.

After having attentively studied the districts in the North-West which are adapted to colonization and having obtained a great deal of information from a large number of families and from public officials as to the resources offered by the country, not only in regard to the cultivation of the land but also as to the different industries, I came to the province of Quebec, where I visited the centres which seemed to me the best adapted for furnishing colonists.

You have been able to verify the result of my efforts by the number of the families and the visitors who took part in the excursions organized by the Canadian Pacific Railway Company on the 30th August and 13th September of last year.

I was able to continue my observations and studies of the country during several weeks last autumn in Manitoba. Since my return in October last I have visited a large number of families, replied to numerous letters and given lectures before attentive and considerable audiences in the Parishes of St. Cuthbert, St. Justin, St. Gregoire, St. Maurice, St. Stanislas, Ste. Angele de Laval, Becancourt, the city of Hull, &c.

Further, I hope that you will be satisfied with a pamphlet which I have carefully prepared and have just published on Manitoba. I endeavoured to give a great deal of information which I trust will contribute towards making our great North-West better known, and by this means increasing the current of immigration from the United States. I have already visited the State of Illinois and I am soon to direct my steps towards the New England States, hoping to accomplish an important and efficacious work there.

In conclusion I wish to draw your attention to the fact that in September last the Abbe Denis Gerin, of St. Justin, P.Q., was among the excursionists. This gentleman was delighted with his journey, as were all the excursionists, and has not ceased since then to second my efforts by his writings which have been so greatly appreciated by all the Canadian press and also by his clever lectures, the result of his observations and careful studies made during the journey.

I remain, Sir,

With consideration,

Your most obedient,

M. BLAIS,  
Priest, O.M.I.

## No. 18

## REPORT OF REV. C. A. M. PARADIS.

DOMREMY, ONT., 13th January, 1899.

The Superintendent of Immigration,  
Ottawa.

SIR,—My annual report for 1898 will be very short. My principal operations have consisted as usual, in efforts to develop the colonizable lands of the district of Nipissing, so as to make them more capable of attracting and retaining an increased population.

The obtaining of a federal charter for the Verner and Timagami Railway is one of the most important events of the year, and earnest hopes are entertained that the construction of that line will commence early next summer, for the great benefit of the old and new coming settlers, who will find employment therewith, as well as an abundance of fertile lands on both sides of the track.

In expectation of that road over twenty families have lately picked up lands in the townships of Crearer and Gibbons where the track is going to cross the Sturgeon and Timagami Rivers.

Mr. J. R. Booth, the well known lumberman, will very soon have finished cutting all the timber on his limits in this part of the country, and it is very likely that the Government of Ontario will put the lands on the market for settlement.

Mines of all description have been found in abundance in the neighbourhood during the last few months. The Sturgeon Falls Pulp Milling Co. makes a great demand for spruce timber, which is plentiful here; sportsmen attracted from the great cities of the United States and receiving from the Canadian Pacific Company a special direction and inducement to visit our beautiful lakes, &c.,—all these things contribute to the quick developing of our resources, and the welfare of our agricultural population. Nipissing is indeed a wonderful district, its fame is rapidly and widely spreading, and advertising the north of Ontario to thousands of intending immigrants. The repatriated French-Canadians of Michigan and New England are not the exclusive object of my solicitude. I have concluded with Mr. C. O. Swanson, the praiseworthy agent, some arrangements in order that he should direct towards my townships an influx of his Scandinavian colonists from the State of Minnesota. The experience I have of those Scandinavians in the township of Hugel is that we cannot wish for a more sturdy, industrious and honest class of settlers. I hope I will see them coming in great numbers in the Sturgeon and Timagami valley, where they will be exceedingly welcome.

The approximate number of newly arrived colonists in my region this year is between forty and fifty families. No doubt that figure will be more than quadrupled in the next season. Wheat and cereal crops have been plentiful, root crops not so encouraging. As a general rule settlers are satisfied, and every one of them is a zealous agent to get friends of his own to join them in this country.

I express the hope, in conclusion, that you will be able to devote a few days of your time next summer, to honour our district with a visit; enjoying the beauties of our grand natural scenery and encouraging the efforts of our habitants.

I am, Sir,

Your obedient servant,

C. A. M. PARADIS,

*Priest, M. C.*

## Department of the Interior.

No. 19.

### REPORT OF THE QUEBEC AND LAKE ST. JOHN RAILWAY COLONIZATION DEPARTMENT.

QUEBEC, 2nd January, 1899.

The Superintendent of Immigration  
Ottawa.

SIR,—I beg to inclose herewith, two schedules, showing the work which has been done by our company in the year 1898, in the way of colonization.

From these documents you will see that 1,138 *bona-fide* new settlers have been sent into the Lake St. John District during the year, of whom more than half were from the United States. In addition to this it may be mentioned that 173 delegates, representing 54 centres of population, were sent to examine the country, and that 7 organized farmers' excursions took place during the year.

I am sure that you will be pleased with the satisfactory results thus achieved. The country is now becoming so well known that we are attracting a very desirable class of immigrants, many of them with means.

Twenty-three lectures were given on the Lake St. John District by the Company's Colonization Agent, Mr. René Dupont, in the United States and Canada, and he is now on a tour through the Western States.

Mr. Dupont reports that in one case a whole parish is preparing to move from the American side of the line, to Honfleur, on the Peribonca River, 9 miles north of the Old Peribonca settlement. This movement has as its head the parish priest and the mayor.

I am, Sir,

Your obedient servant,

J. G. SCOTT,  
*Secretary and Manager, Quebec & Lake St. John Railway.*



## QUEBEC AND LAKE ST. JOHN RAILWAY.

STATEMENT of Free Colonization tickets issued to new settlers from the United States,  
from 1st January to 31st December, 1898.

Name of place.	State.	Number of settlers.
Biddeford .....	Maine .....	17
Chicago .....	Illinois .....	17
Danville .....	Rhode Island .....	8
Detroit .....	Michigan .....	117
Duluth .....	Minnesota .....	5
Fall River .....	Mass. ....	80
Fitchburg .....	Mass. ....	21
Hartford .....	Connecticut .....	14
Holyoke .....	Mass. ....	33
Indian Lake .....	Michigan .....	5
Irwin .....	Illinois .....	28
Lawrence .....	Mass. ....	11
Lime Rock .....	Connecticut .....	11
Lowell .....	Mass. ....	10
Manchester .....	New Hampshire .....	74
Muskegon .....	Michigan .....	11
New Bedford .....	Mass. ....	39
North Adams .....	Mass. ....	9
Paterson .....	New Jersey .....	6
Providence .....	Rhode Island .....	14
Putnam .....	Connecticut .....	16
Salem .....	Mass. ....	11
Washburn .....	Wisconsin .....	4
Webster .....	Mass. ....	23
Winooski Falls .....	Vermont .....	5
Woonsocket .....	Rhode Island .....	6
	Total .....	595

## RECAPITULATION.

U. S. settlers .....	595
Places .....	26
States .....	26

# Department of the Interior.

## QUEBEC AND LAKE ST. JOHN RAILWAY.

STATEMENT of Free Colonization tickets issued to new settlers from January 1st to 31st December, 1898.

FROM PARISHES IN CANADA.

Name of Place.	Name of County.	Number of Settlers.
Baie St. Paul.....	Charlevoix.....	1
Brompton Falls.....	Richmond.....	13
Cap St. Ignace.....	Montmagny.....	10
Cheticamp.....	Cape Breton.....	21
Cote St. Paul.....	Hochelega.....	2
Eboulements.....	Charlevoix.....	23
Garneau Jct.....	Champlain.....	16
Hochelega.....	Hochelega.....	6
Hull.....	Ottawa.....	4
Laval.....	Montmorency.....	11
La Trappe.....	Two Mountains.....	1
L'Islet.....	L'Islet.....	3
Lotbinière.....	Lotbinière.....	2
Grondines.....	Portneuf.....	7
Malbaie.....	Charlevoix.....	12
Montmagny.....	Montmagny.....	9
Mille Vaches.....	Saguenay.....	13
Montreal.....	Quebec.....	52
Notre Dame de Lévis.....	Temiscouata.....	13
Petite Rivière.....	Charlevoix.....	10
Ste. Agnes.....	Charlevoix.....	14
St. Alban.....	Portneuf.....	12
St. Claire.....	Dorchester.....	4
St. Melanie.....	Joliette.....	4
St. Urbain.....	Charlevoix.....	4
St. Eugene.....	L'Islet.....	9
St. Lazare.....	Soulanges.....	7
St. David.....	Lévis.....	6
St. Ferdinand.....	Megantic.....	30
St. Guillaume.....	Drummond.....	13
St. Raymond.....	Portneuf.....	5
St. Thomas.....	Joliette.....	5
St. Sylvestre.....	Lotbinière.....	5
St. Roch des Aulnaies.....	L'Islet.....	5
St. Raphael.....	Bellechasse.....	8
St. Casimire.....	Portneuf.....	8
St. Irénée.....	Charlevoix.....	13
St. Prosper.....	Champlain.....	14
St. Jean Baptiste.....	Quebec.....	4
St. Valier.....	Lévis.....	1
Quebec.....	Quebec.....	125
Thedford Mines.....	Megantic.....	2
Windsor.....	Ontario.....	1
Deschambault.....	Portneuf.....	5
	Total.....	543

### RECAPITULATION.

Canadian Settlers.....	543
Places.....	34
Counties.....	20



Department of the Interior.

PART III.

REPORT

OF

HIS HONOUR LIEUT.-GOV. PATTERSON

ON THE

DISTRICT OF KEEWATIN.



## Department of the Interior.

### REPORT OF HIS HONOUR LIEUTENANT-GOVERNOR PATTERSON ON THE DISTRICT OF KEEWATIN FOR THE YEAR 1898.

GOVERNMENT HOUSE,

WINNIPEG, 30th December, 1898.

The Honourable CLIFFORD SIFTON,  
Minister of the Interior,  
Ottawa.

SIR,—I have the honour to report that while I was unable personally to visit the district of Keewatin during the current year, the information which has reached me from the Hudson's Bay officials resident in the district enables me to state that the condition of the people there is fairly satisfactory. In my report of last year I gave some account of the people of the district, their manner of life and means of livelihood and of the assistance afforded them by the Hudson's Bay officials stationed at the principal points throughout this extensive territory. In regard to this class of population there has been little or no change during the past year, and it continues to be made up of the various Indian tribes and a few Esquimaux in the more northern part of the district.

Their principal means of subsistence, viz., fur-hunting, has been ample, as fur-bearing animals—which in other parts of the North-west of Canada have been somewhat scarcer than usual owing to their periodic diminution—were in the district of Keewatin fairly numerous. The natural food supply of deer, game and fish was also generally abundant, and the Indians were thus enabled to hunt easily, and in consequence experienced what, from their point of view, may be considered a prosperous year, and no instance of extreme privation has been reported to me.

I am pleased to be able to add that not a single case of crime throughout the district has been called to my attention during the past year, and it is unlikely that any offence of a serious nature could have been committed without its being known to the Justices of the Peace or the Missionaries, who in their several localities, are well acquainted with every family in the district, and would have brought to my notice any criminal acts and aided in seeing them properly dealt with.

In the southern part of the district a number of the Indians are employed in connection with the fishing and lumber interests which centre in the town of Selkirk at the southern end of Lake Winnipeg, and these industries having been fairly prosperous during the year, have assisted much in affording a means of living to a number of the Indians of Keewatin.

While it is to be hoped that this comparative state of prosperity may be continued, it must not be overlooked that it is to a large extent dependent upon the quantity of fur-bearing animals which can be obtained and the plentifulness of deer and other game. Most of these animals are migratory and subject to periods of decline, and in times of scarcity the Indians necessarily undergo considerable poverty and privation. The prevalence too, of an epidemic sickness, which fortunately has not been felt during the past year, causes a great deal of distress and sometimes loss of life, and under such circumstances help is needed to assist these people and prevent them from suffering the full effects of sickness and want. With the exception of one medical gentleman at York Factory, who is a Hudson's Bay Company officer there, and not supposed to practise his profession, there is no medical man resident within the whole of the district, and I would again renew my recommendation that a resident doctor be secured whose headquarters would be at Norway House, and that a hospital be established there. This

would entail very little expense and would be a great boon to the people of the district. At present, Indians suffering from sickness of one kind or another, or from accidents, have to wait for a boat to take them down from Norway House to Selkirk, a distance of nearly four hundred miles, in order to be cared for at the Dynevor Hospital near the town of Selkirk. So far as I am aware no medical man has visited the district of Keewatin on behalf of the Department of Indian Affairs since 1896.

I must express my acknowledgment of the assistance afforded to me by Mr. Commissioner Chipman of the Hudson's Bay Company's service in obtaining for me from the officials under him resident in the district much useful information in regard to the lives of the people and the state of affairs throughout the District of Keewatin.

I have the honour to be, Sir,

Your very obedient servant,

J. C. PATTERSON,

*Lieutenant-Governor.*

Department of the Interior.

PART IV.

YUKON DISTRICT.





## Department of the Interior.

### REPORT OF MAJOR J. M. WALSH.

To the Hon. CLIFFORD SIFTON,  
Minister of the Interior,  
Ottawa.

SIR,—When the Canadian Yukon Administration party first camped at the Big and Little Salmon Rivers, it was with the expectation of proceeding by dog teams, as soon as they arrived, to Selkirk and Dawson City. On the arrival of the dog teams, which owing to the condition of the rivers and lakes has been considerably delayed, I decided, as I realized the importance of the influence of the law being put in motion in the Dawson District, and the necessity of the Justice and the Crown Attorney of the District reaching Dawson City as early as possible, to send Justice McGuire, Crown Attorney Wade, Accountant Bliss and Inspector of Mines McGregor to that place, hoping that I would myself be able to follow with the next complement of dog teams, which I understood would arrive in a few days and in which event I would overtake the advance party. With my secretary, dog drivers and dog teams I left the Big Salmon River on February 10th, and on the 14th we were within two days' march of the advance party when we were overtaken by a special courier bringing word that a United States relief expedition was to pass through our territory. On receipt of this information I felt it my duty to return to the coast.

#### INSTRUCTIONS TO INSPECTOR WOOD.

Previous to my departure from the Big Salmon River I had sent full instructions to Inspector Wood, in command of the N. W. M. Police, from Selkirk to the International Boundary line on the south. A copy of such instructions is attached to this report, marked (a).

At the same time I forwarded to you a copy of my instructions to Inspector Wood, and also wrote to you pointing out the most important matters with which they dealt.

I might here state that before starting for Big Salmon River from Dawson City, information was received by me which made it appear to me that my presence was more necessary at the coast than at Dawson City. Subsequent events amply demonstrated the correctness of this information. First, there was the freighting of supplies at the foot of Lake Lebarge and the construction of boats there to carry the supplies down to Dawson City by the first open water. Then there was the construction of boats at Bennett and the shipping of further supplies from that point on the first opening of navigation, the locating and finding accommodation for and the supplying of the reinforcements coming into the district in the spring, the establishment of posts on the Dalton Trail, the river and Teslin Lake posts, and handling of the large influx of people in the spring.

On the other hand, we had learned that the people of Dawson District were safe in their food supply until the 1st of June. My presence there could not help the food situation, and I could do a great deal in that direction by going to the coast. I had also written Crown Attorney Wade to secure a court room, and, if necessary, put the law in operation immediately, and had instructed Superintendent Constantine of the N. W. M. Police to bring his prisoners before the Judge.

Gold Commissioner Fawcett had reported that little royalty could be collected this year owing to the best paying claims being renewed under the old regulations, and that the mines which were being worked under the new regulations would be unable to pay royalty, as their expenses would be greater than their output this year. Under these circumstances it appeared to me that my place was at the coast, where so many matters had to be attended to.

Regarding the United States relief expedition, I wrote you as follows:—"It a foreign expedition is to pass over this district, I consider it my duty to go and see what it is, the number of troops the party consists of, what part of the territory it is to pass over, its authority for doing so, the length of time it is to be in the district, from what point it will depart, and what stores it is carrying. There is not the slightest necessity for an expedition of this kind. If the Government of the United States has a desire to assist any of its citizens in our country along the Yukon River or in their own country on the Lower Yukon, it will only be necessary for them to contract with some parties to put forty or sixty tons of provisions over the passes to Lake Bennett and the foot of Lake Lebarge and at these places to construct boats and ship supplies down the lakes and rivers by the first opening of navigation. This quantity would remove any possible chance of a shortage that may take place between the 1st of June—the date when the shortage would begin to be felt—and the time the first steamers arrive from St. Michaels. I feel quite positive that there is really no danger this year. It is next winter that I fear the population will have to be assured against shortage, if anything like the number of people come into the district that we are informed will do so. If the United States Government would give its attention to this question for next year and put in a large depot of supplies this summer by way of St. Michaels and the Yukon River as far as Circle City, they would be doing something that might prove of great value, but this present undertaking, to people who understand the situation, is inexplicable. If the expedition is only for the purpose of putting supplies at the water and shipping them down by the first opening of navigation, it is all right, but if it is proposed to take the trail to Dawson City it will meet with dismal failure, for neither horse teams, dog teams nor reindeer teams will make the trip to Dawson City at this season of the year. The rivers would not only be open before they could make half the distance, but the expedition would consume all it started with."

I further stated that I would return to the coast, meet the officers in charge of the expedition, confer with them, give them all the information I possessed and assist them in every possible way to make their undertaking a success. At the same time I pointed out that if their plan was to attempt the passage by trail I would show them the folly of such an undertaking. Shortly after my arrival at Bennett I learned of the abandonment of the expedition.

#### RETURN TRIP TO THE COAST.

The morning of the 14th of February we began our return journey to the coast, stopping at the different police posts along the line to inspect the work thereon. At the White Horse Rapids we met Captain Norwood, Inspector of Mines, en route with dog teams to Dawson City and carrying mail and instructions from the Department for the Gold Commissioner. With Captain Norwood I sent further instructions to our officials in Dawson. Subsequently we learned that the advance party reached Dawson City on the 26th of February, and Captain Norwood arrived on 26th March after encountering severe weather and heavy trails. My party arrived at Bennett on 4th March, after having encountered severe weather. During the month of February the thermometer had registered

## Department of the Interior.

from 40 to 60 degrees below zero, night and morning, with a slight rise at midday, and travelling was anything but comfortable.

### AFFAIRS AT BENNETT.

Shortly after our arrival at Bennett it soon became apparent that the activity which we had learned was going on at the coast even exceeded our expectations. The town of Bennett which, six months previously, contained one frame building and one or two tents, now contained twenty frame buildings and hundreds of tents. Thousands of tons of provisions had arrived at that point, some to be carried down the lake over the ice and some to remain in store or cache until the opening of navigation. The two trails—the White and Chilkoot Passes—were blocked with men, animals and supplies, and the collection of duty at the summits was being carried on almost night and day. Along any of the trails, so far as the eye could reach, could be seen one long stretch of men dragging their loaded sleds or urging their jaded animals forward. Sometimes passage would be blocked for an hour at a time.

Wherever timber could be procured boats were under construction, and if many of these boats are primitive in model and outline, their building has at least contributed to demonstrate what the best model of boat is for use in these waters. We found also that several steamers were being put over the passes in sections, and one or two were already being put together again. We also learned that travel on the passes was becoming dangerous. On the 3rd of April a snow slide occurred in the Chilkoot Pass just below the "Scales," in which it is thought some seventy-five people lost their lives. I visited the scene of the accident along with my secretary, but could not ascertain that any of the victims were British subjects.

### THE FOOD QUESTION.

In my report of 31st January, I pointed out that the food question was the most important with which we had to deal. To take such steps as would best assure the people of Dawson District against distress from shortage of food or the more direful possibility of starvation, was my most imperative duty. On my return to Bennett, I immediately gave orders that the work of freighting supplies to the foot of Lake Lebarge, which had been stopped, should be pushed forward with all possible speed. To further protect the people of Dawson District against shortage of food, I sent the following instructions to Inspector Wood as early as 4th January:—

"You will inform the people who are crossing the trails from Skagway and Dyea with the intention of making their way into the Yukon District, that they will not be permitted to cross the line unless they have with them three pounds per day of provisions each for one year. The shortage of provisions at Dawson makes it very important that this order be strictly enforced, and you will make the necessary arrangements to carry it out. I have instructed Inspector Strickland not to permit any person to pass his post unless he has with him this supply."

The salutary effect of this order is now patent to everyone. In the first place, it prevented a great many people from going into Dawson City over the ice with only sufficient provisions to carry them to that point, and from throwing themselves upon the population there for provisions until the arrival of the spring boats with supplies. It was impossible for them to carry in on the ice any such quantity as one thousand pounds. In the second place, it has been the means of bringing

hundreds of tons of supplies over the passes which would never have been brought over had the order not been issued. Men with a few hundred pounds went back to Skagway or Dyea and bought more to make up the full complement of one thousand pounds.

Another effect of the order is that the country will be prospected thoroughly and in a way hitherto impossible, owing to the shortage of food. Men will go up the creeks assured of their food supply and confident that on their return starvation will not be staring them in the face, with the alternative of a tramp of over 600 miles of ice.

The order, I am glad to say, met with universal approval, but particularly from the old residents of the district who understand the situation in the interior and who more fully appreciate the necessity of provision being made for adequately supplying the district with food.

It was with great pleasure that I met Capt. Ray, U.S.A., commanding the District of Alaska, early in April. I had an opportunity of getting a full report from him as to the food situation on the Lower Yukon, and it was on account of the favourable nature of that report and information received from Superintendent Constantine at Dawson City that all danger of shortage of food in that direction before the arrival of the spring fleets from up the river was over that I sent the following communication to Major Steele to be forwarded by him to Inspector Strickland at Fort Sifton:—

“The purpose of the order requiring every person entering the Yukon District to carry with him one thousand pounds of provisions was owing to the shortage of food in that district, and was intended to keep people from going there this winter without carrying sufficient quantity of provisions to keep them until the boats would arrive in the spring.

“Feeling now quite assured of having 50,000 pounds of provisions for shipment from the foot of Lake Lebarge, the Hootalinqua Post, Freeman’s Point and the Little Salmon River, to Dawson City, at the opening of navigation, and the time being near at hand when the ice of the trails can no longer be used to permit people to reach Dawson before the spring fleets from the upper lakes freighting large quantities of supplies will arrive, I consider the danger-point passed of any shortage of food taking place before relief can reach it by water. I have, therefore, decided to reduce the quantity of provisions which each person should have with him to 600 pounds, and as soon as the rivers break up and passage to Dawson City by ice is positively at an end I shall withdraw this order entirely.”

I may say here that the “Year’s Supply” order was the means of having large quantities of supplies shipped into Dawson by the very first opening of navigation, upon which the population of Dawson City lived for three weeks before the arrival of the first steamer from down the river. The first shipment of Government supplies which reached Dawson City, on 17th May, arrived just in time to save the police force from being out of supplies, only two days’ rations being left.

I do not know that I can add anything to my report of 31st January on the food question outside of what I have said, except to emphasize its importance. To permit of this district being thoroughly prospected and developed, the population must be assured of its food supply beyond peradventure, and at reasonable prices, and the only way in which such a supply can be thus secured is by providing transportation facilities. I strongly called the attention of the Department to my previous report in this connection and to the necessity of providing telegraphic communication. With improved transportation facilities and telegraph communication the cost of living and the price of labour will be so reduced, as will also the price of articles and materials required for mining purposes, that thousands of acres of land which cannot now be worked profitably may be worked with satisfactory returns.

## Department of the Interior.

### FROM BENNETT TO DAWSON.

On the 3rd of May, having arrangements quite complete for the proper carrying out of the many matters which required attention at the coast, I again set out for Dawson City, taking with me three Peterborough canoes, it being my intention to proceed to the foot of Lake Lebarge over the ice and from thence to Dawson by water. On 9th May we arrived at the Lewes Post (foot of Lake Lebarge), having encountered very little difficulty. Captain Starnes, of the North-West Mounted Police, left the Lewes Post immediately after my arrival there, with twenty-three men and nine boats, carrying something over 50,000 pounds of provisions. We left the Lewes Post on the 11th and arrived at Selkirk on the 14th. Captain Starnes arrived with his fleet on the 15th and left the same day for Dawson City, which point he reached on the 17th. We remained at Selkirk for three days and tried to get up the Pelly a short distance, but could not do so, owing to the current being too strong at that season of the year. We examined the country in the vicinity of Selkirk thoroughly, and I have no hesitation in saying that it is the finest location between Dawson and the coast, by the Bennett route, that can be found for a town site.

On 19th May we arrived at the Stewart River, made an inspection of that locality and proceeded on the way to Dawson where we arrived on the 21st.

### ROYALTY.

On arrival at Dawson I found a great many questions awaiting solution which could only be disposed of by the authority of the Commissioner. For instance, the question of royalty, over which there had been considerable discussion, appeared to be somewhat mixed. I immediately announced that royalty would be collected on all claims the leases of which were renewed subsequent to the date when the law came into force. Nearly all the leaseholders of the larger prospected claims showed a disposition to respect the collection of royalty. Others, however, were not so tractable, their principal objection being that their leases were granted for one year and that once being granted subsequent restrictions could not be placed upon them.

I pointed out to the leaseholders that collection of royalty was necessary for the maintenance of courts of justice, for police protection, mail communication, and for public services. While acknowledging the force of these reasons they submitted that a more thorough examination of the real cost of outputting the gold would convince the Government that the royalty is a severe tax and expressed a hope that next year would see it removed. Royalty was not collected from any claims which had not got into good working order or which could not show a profit after paying royalty, and this would represent a large sum. Again, more than half the leases were exempted from royalty on account of having been renewed previous to the date of the law requiring the payment of royalty coming into force. The collection of royalty will amount to about half a million dollars.

### APPROPRIATION FOR IMPROVEMENT OF TRAIL.

Immediately after announcing that royalty would be collected, I appropriated \$4,000.00 for the improvement of the trail between Dawson City and the Eldorado and Bonanza Creeks, and this appeared to give much satisfaction.

### DOMINION CREEK.

The speculations as to action which would be taken regarding Dominion Creek were scarcely less than those I have referred to as to royalty. By some

means the staking of this creek had become very complicated, numerous disputes had arisen and the Gold Commissioner in consequence had closed the creek pending a survey when matters could be properly adjusted. The claims on this creek had been staked after the new regulations were in force, and should have been 250 feet in length, whereas they were staked 500 feet. After careful examination we decided to confirm the rightful staker in his claim of 500 feet. The settling up of the claims in this way gave great satisfaction. All the remaining creek claims on Dominion and all fractions of claims were reserved to the Government.

Many other disputes regarding claims were constantly presenting themselves, but in due course were satisfactorily disposed of.

#### GOVERNMENT BUILDINGS.

I found on arrival at Dawson that the Gold Commissioner had contracted for a new building on the Government reserve for an office, the old office being altogether too small. Subsequently I found that the new building was also too small, and I, therefore, authorized the erection of an addition to it for the accommodation of the Mining Inspectors and Government Surveyors who had hitherto been without offices. Work on this addition was not begun when I left Dawson City.

The Gold Commissioner's house was also too small for his own and his staff's accommodation, and I authorized an addition to be made to it which will make it comfortable quarters.

It was also found necessary to provide accommodation for other Government officials in the district, and with this object in view tenders were called for, for the erection of a building on the Government reserve. This building is a commodious and substantial structure, having seven good bed rooms.

The storeroom at the barracks was entirely too small for the post, not having a capacity for more than three or four months' supplies. It was, therefore, found necessary to provide further accommodation for storage purposes, and I accordingly authorized the construction of a new storehouse.

As the guard room at the barracks was entirely inadequate, I authorized the construction of a new building for that purpose and for an office for the officer in command.

The mail service had increased to such proportions at Dawson City that it was impossible to find sufficient room for its distribution in the barracks, where it had hitherto been done, and in consequence a building had to be procured in the town. As the owners of this building wished to use it for other purposes it was necessary to provide some other place where the mail service could be properly attended to. In accordance therewith a new building suitable for the service to be efficiently performed was contracted for, and is probably now completed.

All these buildings have been constructed on the Government reserve close to the barracks and should any changes, such as the construction of a new post office, be deemed advisable at any time, they can always be made use of with advantage.

#### MAIL SERVICE.

In my opinion the Post Office Department should take over the mail service of this district—certainly the Dawson part of it. The service is growing very large and requires the full attention of a postmaster with a few clerks thoroughly educated in the service. It is impossible for the police to handle it satisfactorily. From five to thirteen men were constantly employed to carry out this work at Dawson, reducing the number available for other duty below what it should be.

I think it would be advisable to establish a branch post office at the Forks of the Eldorado and Bonanza Creeks where people up the gulches may get their mail.

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### SALE OF GOVERNMENT LOTS.

Previous to my arrival at Dawson, Mr. Wade, Registrar of Lands, had had a survey made of lots in the Government addition of the town of Dawson. All these lands had been applied for. I gave instructions to have them properly valued and public notices posted so that the lots might be sold in accordance therewith. Subsequently a survey was made of the town of Klondike, and the lots according to that survey will be disposed of in a similar manner.

### LEASE OF WATER FRONT, DAWSON.

I also found on my arrival at Dawson, that Mr. Wade and Mr. Fawcett, as the representatives of the Dominion Government, had leased to Messrs. R. Morrison and A. McDonald, for \$30,000.00 per annum, part of the water front of Dawson. Before the terms of the lease were settled with Messrs. Morrison and McDonald, tenders for the water front had been made to Messrs. Wade and Fawcett. Mr. W. Bourke had offered to pay quarterly a rent of \$3,000.00 per annum; Mr. M. L. D. Keizer had offered an annual rental of \$7,500.00 for the whole front, or one of \$120.00 for each lot of 25 feet; Messrs. Dunsmore, Spencer and McPhee had offered an annual rental of \$25,000.00 payable monthly in advance; Mr. John Cameron had offered a monthly rental of \$2,050.00; and Messrs. Morrison and McDonald had offered one of \$2,500.00 per month, or \$30,000.00 per annum. A part of the tract, about 100 feet frontage which it was proposed to reserve as a site for Government offices, and all of the front which extends from a point 50 feet to the north of Third Street to the Smith addition to Dawson, being all that afforded sufficient water for steamboat landing purposes, were excepted from the land covered by the lease. It was granted for but one year, and even this short term may be terminated by one month's notice from the Government.

The transaction being one which I considered to be most satisfactory from every standpoint, I at once gave it my approval.

### LIQUOR.

On my arrival at Dawson I found that Mr. Bulyea, representing the North-west Territorial Government, had collected \$2,000.00 license fee from each of some sixteen saloon-keepers, and had issued licenses to them accordingly. I had written you previously that I could not recognize the authority of the Territorial Government in this district, and advised the saloon-keepers that I would not recognize Mr. Bulyea's action. The saloons were, in consequence, run as before Mr. Bulyea's arrival at Dawson, under regulations defined by Superintendent Constantine, of the North-west Mounted Police, with some few amendments, such as the closing up of the bars on the Sabbath. Such liquor as was brought into the district was passed through under permit from the Lieutenant-Governor of the North-west Territories previous to my appointment as Chief Executive Officer of the Government of Canada in the Yukon District, except in two instances of permits issued on my own authority. In two or three cases liquor was allowed to pass into the district at Dawson City by the North-west Mounted Police at Tagish, under permit issued by the Territorial Government, subsequent to my appointment as aforesaid, but why those permits were recognized I have been unable to ascertain, as it was directly contrary to instructions in this regard, which I had explicitly given and which I thought were as explicitly understood. Immediately upon the arrival of this liquor at Dawson I ordered it to be put in bond until such time as instructions could be received from Ottawa. At the same



time I forwarded instructions to the Officer commanding the North-west Mounted Police in the Southern District to rigidly adhere to my previous instructions, and I concurrently sent him a copy of the list of permits which had been issued for the importation of liquor into the Yukon District, which were to be honoured by him, instructing him that these were the only permits which he could honour. This was in accordance with your communication to me from the Deputy Minister of your Department, with which was inclosed a list of all permits issued for the importation of liquor into the Yukon District up to that time. I forwarded a copy of this list to the Officer commanding the North-west Mounted Police in the Southern Division. At that time I wrote to you that I would do all in my power to curtail the liquor traffic and strongly advised that until I had seen you and given you all the details of which I had become cognizant, liquor be prohibited from the district. Subsequently, I received a further list of permits from Colonel Steele, which had been issued by the Government of the North-west Territories and which, having been held by the Minister of Justice to be legal, had to be recognized, and I gave orders accordingly.

#### POLICE POSTS.

The following police posts are now established in the Yukon District:—

Fort Cudahy, Dawson City, Stewart River, McQuesten River, Fort Selkirk, Five Finger Rapids, Little Salmon River, Big Salmon River, Hootalinqua River, Lewes Post (foot of Lake Lebarge), Lebarge Post (head of lake), White Horse Rapids, Fort Sifton (Tagish), Dalton International Line Post and Dalton's House. There is also a detachment at Bennett, one at Linderman, one at the summit of the White Pass, one at the summit of the Chilkoot Pass, and one at the Stikine River.

#### LAW, ORDER AND SABBATH OBSERVANCE.

It has been a matter of gratification to me to note the law-abiding and orderly character of the permanent and transient residents of Dawson and the district generally. All have evinced an earnest desire to obey and uphold the law. I found, however, on the first Sunday after my arrival at Dawson that while order was preserved as usual, the general week-day business was continued. I deemed it highly improper that the Sabbath should be desecrated, and at once gave orders for its due observance in accordance with the statutes in that behalf, and since that time the Sabbath has been quite as well observed as it is in the older towns east. In confirmation of the above I may copy the following from a Dawson City paper that has been usually hostile to Canadian administration:—

“No one here but admits that never before have we been personally present where so astonishing a state of order and safety to life and property has been maintained. It is something to be remembered and spoken of the longest day we live.”

A prominent American resident in Dawson, writing to the press said, upon the same subject:

“I wish to say in regard to the Mounted Police who govern the North-west Territory under the management of Major Walsh, that a more orderly and quiet mining camp does not exist on the face of the globe. They have complete control, and the people are high in their praise. Your property and person are safe all the time. You need have no fear day or night.”

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### COURTS ESTABLISHED AND THE LAW AT WORK.

I found, on arrival at Dawson, that law courts had been established, several criminal cases had been disposed of, and two sentences of five years' imprisonment had been imposed. The moral effect of this is patent. People feel that although they are residents of an outlying district, justice is administered as it is administered wherever the British flag flies. Shortly before my departure from Dawson, four young Indians were brought to trial for the murder of one William Meeham on the McClintock River, and were found guilty and sentenced to be hanged on 1st November next.

### ASSISTANCE TO HOSPITALS.

Some time after my arrival at Dawson the Rev. Father Judge, priest of this district, informed me that the St. Mary's Hospital under his charge had reached a state of financial embarrassment, and that if no assistance were forthcoming he should have to discontinue receiving patients. He also informed me that some provision would have to be made for the patients already in the hospital. This institution has been one of great mercy to the district, and up to last year had received sufficient support from the mining population to meet all its expenses, but the scarcity of food last fall and the large number of persons who were left in the district without money or labour to provide it, threw upon the hospital a great number of sick who were unable to pay for attendance. The liability incurred by the hospital for provisions and for other articles required for the sick, amounted to \$25,000.00. In addition to this amount a large sum of church money had been taken and used for hospital purposes. Owing to the condition of affairs here, institutions of this kind are far more required than in any other district I have ever known, and it was quite apparent that we would have to come to the assistance of St. Mary's Hospital; otherwise, should it be forced to close, the care of the sick would surely fall upon the Government. This would entail an expenditure of not less than forty or fifty thousand dollars. Under these circumstances, I sanctioned a grant of \$5,000 to aid in the liquidation of the debt of St. Mary's Hospital, which grant was cordially approved by the clergymen of other churches resident in the city. Messrs. Wade and Davis collected a similar amount by private subscription, and a committee was formed for the purpose of raising the balance necessary to clear the hospital of debt.

### GENERAL HOSPITAL.

A general hospital was also under construction by the Presbyterians and Episcopalians, and I authorized a grant to them of \$2,500 to enable them to open the hospital as soon as possible. These institutions are absolutely essential to Dawson. A large population of men living alone in cabins or tents, with nobody to assist them in case of illness, have but one place to go to and that is the hospital, and I therefore recommend that the matter of future assistance for such institutions be given consideration.

### THE CHURCHES AND FRATERNAL ORGANIZATIONS.

On my arrival in Dawson I found that the Episcopalian body had already built a church and residence upon the police reserve, and I granted permission to the Presbyterian, Methodist and Greek bodies, and Salvation Army, respectively, to

erect churches; also for a general hospital. I also granted permission to the Masons, Oddfellows and Foresters conjointly to erect a building on the reserve, and I acceded to the request of the Presbyterian Church and the Roman Catholic Church to build upon the reserve at Selkirk near where the English Church Mission had already built.

#### BANKS.

The opening by the Canadian Bank of Commerce and Bank of British North America of offices in Dawson City has been a great boon to the population. The people have now a safe place to deposit their gold dust and are able to purchase drafts for the shipment of money to the outside without risk. The currency is also of great convenience.

#### DAWSON.

The town of Dawson has shown remarkable growth during the past summer. From a population of from five to seven thousand in May it increased to from sixteen to seventeen thousand in July. Most of the people were living in tents. The saw-mills were running day and night, and preparations were being made by a great many for winter quarters.

I understand that under the new Act for the Government of the Yukon District provision has been made for the immediate incorporation of Dawson and other places. This will be a great benefit. Dawson should be incorporated with as little delay as possible so that the responsibilities of municipal government may be placed upon the inhabitants at an early date.

#### RIVER NAVIGATION.

The navigation of the Upper Yukon River between Dawson City and Bennett and Teslin Lake has become an accomplished fact, and the practicability of these routes for steamers of paying capacity has been demonstrated to a certainty, and in the future the passenger and the freight traffic as well will be by these two routes and not by St. Michaels and the Lower Yukon. A suggestive commentary upon the St. Michaels route is that the first steamer this season did not arrive in Dawson from down the river until the 11th of June, and this steamer had wintered at Fort Yukon and arrived with only a small quantity of provisions. The first boat from St. Michaels did not arrive at Dawson until the latter part of July, and as no boat has ever left Dawson City later than the first week it shows the navigation of the American Yukon River to be of not more than six weeks duration, while by the British Yukon there is safe navigation from Bennett or Teslin Lake from the 1st of June up to the middle of September, and in some seasons up to the 1st October. Again, steamers can make the trip from Dawson to Bennett which in six days brings them within two days of the coast, while it takes from eight to ten days for the best boats to make the trip from Dawson to St. Michaels. Steamers will make the trip from Bennett to Dawson in three days, while it takes a steamer from St. Michaels to Dawson from sixteen to twenty days to make the trip. Then it is 1,000 miles further from St. Michaels to Vancouver than from Skagway to Vancouver, and Skagway is only 48 miles from Bennett. Another point is that supplies going into the district by the American Yukon are carried against the current, while by the British Yukon they are carried with the current, all of which proves the advantage of the Canadian route over the American route, and with our own coast port the advantage which the Canadian merchant would

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have over the American merchant in supplying the district with what it requires is evident.

This winter the channel of the Thirty-Mile River could be greatly improved by the removal of the dangerous rocks in its course. It would require very little expense to put this river in safe condition for navigation. I would recommend that attention be given to this matter at once. Last winter when I was going up the river over the trail I noticed that the dangerous rocks were all exposed. A charge of dynamite could very easily remove them. Some dredging at the foot of Lake Lebarge and at Cariboo Crossing would also improve navigation by this route. In a former report I stated that the Lewes River was not navigable, and intimated that it could not be made navigable. I have since found that the waters of this river are very much deeper at the points referred to in my report than I was then aware, and by removing a few rocks at different places a good channel for navigation can be secured.

### RESERVATION OF LAND FOR THE GOVERNMENT.

I reserved for the Government all land outside of the Harper, Smith and Day additions to the town of Dawson, and also all the suitable land on the west side of the river opposite to Dawson. I would strongly recommend that if patents have not yet been issued to Harper, Smith, or Day, and if the Government is not bound to issue such patents, that patents to these parties for their respective additions to Dawson be refused.

I also reserved for the Government the most suitable town site property at the Forks of the Eldorado and Bonanza Creeks, at the mouth of the Stewart River, at the junction of the Stewart and McQuesten Rivers and at Selkirk.

### MINING REGULATIONS.

For the purpose of providing a suitable tribunal for the hearing and decision of disputes with regard to title in placer mining property, I deemed it advisable to amend the regulations governing placer mining in the Yukon District. A copy of my amendments is attached hereto, marked (b.) To facilitate convenience of management and to afford description of mining properties, I divided the Yukon District into four mining divisions, according to the memorandum or regulation, of which a copy is hereto attached, marked (c).

### PRESENTATION OF PETITION.

A committee representing the mining interests of the district called upon me and presented me with a petition requesting that I would lay it before the Government. This petition, which deals with several matters regarding the mining regulations, accompanies this report.

### TIMBER.

Regarding the timber of the district, a policy of extreme caution should be adopted. Without timber there can be absolutely no development in this district, and the regulations should be such as will best ensure its preservation while affording the population all that its members require for legitimate use. Timber leases should be issued from the district, and not from Ottawa.

## GOVERNMENT HEADQUARTERS.

While Selkirk may perhaps in a few years become the proper place for the Government headquarters of the district, it is not so at present, nor can anything be done to make it the centre while the Klondike and Indian River districts turn out the gold they are now doing. Dawson City, in the meantime, must be the seat of Government for the Yukon District.

## THE BATTALION.

On my arrival at Selkirk on my trip up the river I found Col. Evans camped there with sixty men. The balance of his command had not yet arrived. Good progress had been made in getting out logs for the various buildings to be constructed. I informed Col. Evans that it was more than likely that at least 100 of his command would have to winter at Dawson. Subsequently Col. Steele advised me that the police force at Dawson was to be increased to 70 men, and I wrote to Col. Evans stating that perhaps this number would be sufficient to perform the work there this winter.

## WEIGHTS AND MEASURES.

An officer to attend to this duty should be sent in at once. A great deal of business is done with gold dust, and it is very important that the gold scales at business places should be well looked after. I was informed by a weigh man in one of the establishments that a gold sack with \$100 in it will in small purchases run short about \$25, or in other words, the weigh man takes 25 per cent. There should also be a fishery inspector. The Weights and Measures Inspector could attend to both these duties.

## ASSISTANT JUDGE.

I would recommend that an Assistant Judge for the Dawson District be appointed, and that one of his duties be the deciding of mining disputes. I do not think anyone but a lawyer is qualified to try these cases.

If the present Gold Commissioner had such qualifications, I am inclined to think that complaints against his administration would have been few—if indeed any would have been made.

## STEAMBOAT INSPECTOR.

A steamboat inspector should also be sent here to examine and make inspection of the steamboats operating on the lakes and rivers of this district. A large number of people are and will be travelling by steamboat, and I am quite sure that these vessels are not sailing under regulation.

## MR. TYRRELL'S SERVICES IN THE KLONDIKE DISTRICT.

I would recommend that Mr. Tyrrell, at the end of his season's work, which I understand terminates about the end of September, should be sent to the Klondike District to make a thorough examination of the work going on there during the fall and winter. No expense should be attached to this action other than the payment of Mr. Tyrrell's services and his expenses. The information he would

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be able to gather could be used to great advantage in other districts, and I think this excellent opportunity should not be lost.

### INCOMING POPULATION.

It is hardly possible to estimate the number of people who will have passed into the Yukon District before the closing of navigation this fall, but whatever the number may be it is certain that a great deal of new ground will have to be opened up in order to retain all the people now in the district. There can be no doubt that a great many will become disheartened and discouraged at what may seem to them ill-success, due in reality to their own unfitness for combating the circumstances surrounding them. There will, however, be a great many who are fully alive to the situation and who will assist in opening up the new territory. That there will be an exodus of the disappointed ones next fall and winter may be anticipated. Their departure will in no way be detrimental to the mining interests of the district. Quite the contrary, as only men of energy and perseverance can be of benefit to the district.

### OUTPUT OF GOLD AND GENERAL PROSPECTS.

The output of gold this year from the Yukon District will be in the neighbourhood of ten million dollars. When I left Dawson on 4th August, the spring and summer's output amounted to about eight and one-half million dollars, and we estimated that there was about two million dollars of gold still on the dump, most of which could not be washed up for want of water, but depending entirely upon rain this could be cleared up before the close of the season. Three million dollars was carried over from last autumn, which was shipped out this summer. This amount cannot be counted in this year's output. It will require this year about three and one-half million dollars to do the business of the district.

When the difficulties of operation, the scarcity of supplies and the lack of proper facilities for mining and the small territory worked are considered and understood, an output of ten million dollars is a remarkable showing and justifies great expectations for the future. Practically, Eldorado and Bonanza are the only two creeks upon which any considerable work has been done. They, therefore, represent the output this year. Next year with Dominion, Hunker, Sulphur, and several other creeks, as well as a great many hill and bench claims will be added to the list of producers and it is impossible to make any estimate now of what the product of gold will be. Some less expensive way of thawing out the ground will doubtless be found and a better process of mining can then be adopted. There is a great field for hydraulic operations, and this system will no doubt be introduced before long. Work can then be done on a large scale. The output of gold should continue to increase from year to year until it reaches a sum which will class the district among the greatest mining camps in the world.

The Klondike District will be a mining camp for the next twenty-five years, affording rich returns. It will be a large consumer, and we must secure the trade consequent upon the consumption, at least 75 per cent of which should be ours. We can get this trade if we so desire and take the necessary steps, that is, not only the trade of the British Yukon, but the trade of the Lower Yukon as far down as Fort Yukon.

During this summer perhaps from three to five thousand people went up the Stewart River, some of whom went up only a few miles and some above McQuesten River. Very little intelligent work appears to have been done, but good prospects were found in one or two instances. It is confidently believed that the

region of the McQuesten River is very rich, and to encourage prospecting in that locality a detachment of police was sent to the junction of the McQuesten and Stewart rivers, and a Mining Recorder was appointed for that division.

A great many people also went up the Pelly, Little Salmon and Big Salmon rivers, but no reliable reports have yet been received as to what prospects have been found in these localities. Mining operations in the Yukon have really only begun and with improved facilities for operating, and the introduction of the hydraulic system of mining, it is impossible to foretell what the future will yield.

Before leaving this subject, I feel that it is my duty to state that the trade of the Yukon District is certainly going to be lost to Canada if something is not done to correct the mistake made last session in the defeat of the Teslin Lake Railway Bill. Immediately after this Bill was defeated the Skagway railway was pushed forward with all the energy possible.

This matter of trade is, in my opinion, a question of the greatest importance to Canada and one which should claim the close attention of the Government. To-day it is worth eight million dollars. Ten years from to-day it will be worth thirty millions. At least 90 per cent of this enormous trade should come to the provinces of Canada, which produce nearly everything that is required for the district.

It is to me a matter of surprise that the business men of Canada have not taken greater interest in this question. In fact, it appears to me that our people generally have given little, if any, attention to the district. It may surprise you, but it is nevertheless a fact that until the arrival of Col. McGregor in July there was not a properly accredited representative of the Canadian press in the district. No one commissioned by any of our leading newspapers to examine into the conditions of the country as they existed, or its wants, and to report the result of his investigation to the Canadian people, has visited the territory. By that means the people of Canada could have obtained reliable and worthy information regarding the country and its means. All the information sent out from the country was left to the representatives of English and foreign newspapers to supply. Last spring and summer there were in the Yukon in the neighbourhood of two hundred representatives of newspapers, sent there for the express purpose of examining into the resources and wants of the district. Of these about thirty-five represented English papers, about ten represented papers published in Paris, ten papers published in Germany, and about one hundred and forty represented newspapers of the United States. From time to time occasional letters from the Yukon appeared in Canadian papers, but these were only from casual correspondents, and were general in the character of their contents. They were not written by men who made it a business to investigate and obtain information such as was needed to bring the people of Canada thoroughly in touch with the needs of the country in a commercial way. There is, however, this to be said—that while the American papers have heaped upon us a great deal of abuse, our thanks are certainly due to them for advertising our country, as without the assistance of their press and population, comparatively little would be yet known of the British Yukon.

#### NEWSPAPER REPORTS.

I wish to call your attention to the reports which have been published in certain newspapers accusing officials of the Yukon District of corruption. These reports are absolutely false. I have inquired into the matters which have come to my notice through the press, and found no foundation for them. During my stay in Dawson City I several times requested the public to send in any charges which they had against any of the officials in the employ of the Government in the

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Yukon District, and I also had the request made from the platform at a mass meeting, that if persons who were accusing the officials and employees of the Government with corruption would make their charges to me they would be thoroughly investigated; but not one single charge was presented.

The abusive crusade or agitation against Dominion officers in the Yukon was, I am informed, first started by a Mr. Perry at Skagway. It was carried over the passes from there by the people going into Dawson, and was circulated among the disappointed new-comers.

It was then taken up by the coast papers and by them sent broadcast over the land. As soon as I heard of it I took prompt action to ascertain what truth there was in the reports that were being circulated. With that object in view I sent out requests everywhere asking people, if they had any charges against officials, to hand them in to me and they would be thoroughly investigated and, as I have before stated, I even went so far as to have the matter referred to at a public meeting. The only responses to my requests were charges which were made against some of the police for offences of a minor nature. These charges had nothing to do with the administration of the post office, the land or mining laws, but were for such offences as using abusive language, &c. They were carefully inquired into. Not one charge, however, was made against any official of the Government.

Officials of any Government entering into a new and isolated district where the people are not closely restricted by law and are free from taxation have almost invariably met with just such an experience as we have had. The introduction and enforcement of law and taxation naturally made us unpopular with the older residents, who were unaccustomed to that sort of thing. Added to this, some twenty thousand people of all nationalities had flocked into the district in a few weeks. They did not find things as they were in their own country and, as might be expected, in a few weeks everyone was dissatisfied with everything around him. The Englishman from South Africa wanted things carried on as he had been accustomed to have them carried on there; the New Zealander, as they had been carried on in New Zealand; the German and Swede as in their motherlands. Those who came from the United States wanted the mining laws and regulations adopted which are in force in that country, and the British Columbian called out for the regulations of his province, with this exception, that in his case he preferred the 500-foot claim of the Yukon to the 100-foot claim of British Columbia. When regulations could not be made to suit all these varied elements of population, the officials and the law had to be abused and, therefore, the crusade that was started against both.

### ALIENS.

The results of my experience and the knowledge I have gained during the past year will not admit of my agreeing with those who think that it would be proper for the Dominion Government to pass a law prohibiting aliens from taking up mining claims in the British Yukon. The gold-bearing territory of the district is of such vast extent that to do it justice and to develop its resources properly a large population will be required, very much greater than our own country can, or will, provide. In July last there was in the district a population of about 30,000, of which 25 per cent were British subjects, and of these only about one-half, or less than 4,000 were Canadians.

The cold and inhospitable climate, combined with the expensive and hard labour attendant upon mining in that country, will always make it an unpopular and unfavourable "mining camp," and for this reason the mining laws and regulations must be liberal so as to attract and encourage the population and capital of the world. Good facilities for communication and transportation must be provided



in the district. A telegraph line is an immediate necessity, and the construction of a railway from the coast to the headwaters of the river and steamboat transportation on the river, are matters of the greatest importance. With these things in operation, food and other supplies will be made cheap. The price of labour will be so reduced that wages can be made on ground that will pay the miner from \$5.00 to \$10.00 per day, and when this is done the Yukon District ought to give to the Eastern Provinces of the Dominion a trade that in a few years will exceed that of any foreign nation.

#### OWNERSHIP OF CLAIMS BY OFFICIALS.

With regard to the question which has arisen as to the propriety of an official taking up a claim in the Yukon District, I fail to see any reason for not permitting him to do so, nor any way in which the public or the public service can be thereby injured. The people east have a very mistaken idea on this question. They seem to think that with the staking of a claim a fortune is assured. This is a delusion, the best evidence of which is the fact that 50 per cent of the claims which have been staked in the Yukon District have either been abandoned or not entered for. I know many men who came into the district at great expense of labour and money who have withdrawn from it without even locating a claim, and I know of hundreds who have staked claims who only did so with the hope of being able to sell them on the outside to people unacquainted with their value. After a claim has been staked there is a great deal to be done before its actual value—if it has any—can be determined. The cost of prospecting a claim may be anyway from \$500 to \$2,000, and even five times as much as the latter amount has been expended in prospecting claims which are now abandoned. Perhaps with cheaper labour they may be worked at some future time.

To prove that the simple staking of a claim in the Klondike does not mean that something valuable has certainly been secured, is established by the fact that claims can be bought at auction sales which take place three or four times a week at the mining exchanges for prices which range from \$10 upwards, and that there are many who prefer taking chances with a claim thus purchased, to undertaking the labour of prospecting for one.

I do not think that either the service or the public has suffered by those of the officials who were located in the Yukon District previous to 1897 and who took up claims, and I feel confident that no injury or injustice has been done to any person by the few officials who have staked claims since that time. I hope the Government will not refuse the privilege of staking a claim to any man in the service. At the same time I would not permit any public official to speculate in such claims. Did I wish to procure a claim in the Klondike myself I would buy it or an interest in it after it had been prospected, and I am sure I would acquire it at less expense than if I had prospected and staked it myself.

#### PROPOSED GOVERNMENT.

For the government of the Yukon District I would recommend the appointment of a council to consist of the Commissioner and of four appointed and four elected members, the appointed members to be selected from the population of the district, and the elected members to be returned from the four districts of Dawson, Stewart River, Pelly River and Hootalinqua River—that is, each of these districts to be entitled to elect one of such representatives.

I would also recommend that a census or registration be taken of all British subjects in the district, and that they only be eligible to vote for the four representatives above referred to.

## Department of the Interior.

The Federal Government should also convey to the Yukon council such powers as will enable the council to grant incorporation to towns and municipalities, if the Act passed last Session with regard to the district does not contain the necessary provisions. I understand this has now been done.

A government made up in this way, giving the population an elective representative from each of the four mining divisions (and such a representation is certainly all that should be granted at present) will, I am assured, give satisfaction to the population and remove a great deal of the present grumbling.

In concluding this Report and at the same time bringing to a close my term of office as Commissioner of the Yukon District, I may be permitted to summarize briefly some results of the year's work. Although the expedition under my command undertook a great task and at an unfavourable season of the year, it nevertheless accomplished all it went into the district to do and succeeded in surmounting the many obstacles which confronted it. Police posts were established wherever necessary to form a complete chain of communication from one end of the territory to the other, and for the enforcement of law and the preservation of order, and by the location of these posts it is now possible to travel from the northern to the southern boundary of the district without being exposed to the danger of perishing either from want of food or lack of shelter; courts of justice were opened; the mining regulations were enforced and in some respects amended; the Yukon District was divided into four mining divisions for the greater convenience of identifying mining locations; buildings were erected for the accommodation of the several public offices; needed assistance was granted in aid of hospitals; sites were granted to various denominations for the erection of churches; trails were improved; town sites at the most important points in the district were reserved for the Government; a thorough examination of the several routes by land, lake and river and of the passes was made, also of the timber resources of the district; relief and shelter were given to travellers over the ice last winter from Dawson to the coast, and the most complete law and order has been established throughout the district.

In a word, the Yukon has, during the past year, become a live, populous and promising outlying Canadian possession, and only awaits railway, steamboat, telegraph, postal and transportation facilities generally, together with liberal mining regulations and a firm administration of the law, to make it a rich and profitable field for Canadian enterprise.

Your obedient servant,

J. M. WALSH,  
*Commissioner, Yukon District.*

YUKON PROVISIONAL DISTRICT,  
15th August, 1898.

## SCHEDULE A.

## COPY OF INSTRUCTIONS TO INSPECTOR WOOD.

The following posts will be put out early in the spring:—

## ON DALTON TRAIL.

Between the International boundary line and the Five Finger Rapids a mounted detachment of one officer and fifteen men, sixteen saddle horses and ten pack horses, to be distributed as follows:—

An officer and ten men, eleven saddle horses and ten pack horses at the International Line Post.

A non-commissioned officer and four constables and five horses at the Five Finger Rapids, the terminus of the Five Finger branch of the Dalton Trail.

The men and horses for the Five Finger Rapids Post should reach there as early in June as possible.

Good hay and grass can be found convenient to the International line and good grass at the Five Finger Rapids.

Provisions, stores and grain will be packed to the Line Post by post pack horses, and will be freighted to the Five Finger Rapids Post by boats from Bennett.

The detachment at the International line and at Five Finger Rapids should be well informed in customs work and tariff. Information received makes it very important that this trail be well looked after during the coming early spring and summer, as it is altogether likely large quantities of merchandise and liquor will pass over it in the hope of escaping the customs.

The post at the Five Finger Rapids will be in a position to intercept any parties who escape the Line Post. The supplies for this post will be freighted down from Bennett, three of the men for the post to freight them to the Five Finger Rapids and the other two men of the post to take the horses there by trail. The men going down by boat should start as early as possible and have the post established when the other two arrive with the horses. This post will require a good boat. This detachment will occupy tents during the summer. It is likely they will be called in in the autumn.

The detachment at the Line Post will, in the absence of a customs official, examine all goods coming in, ask to see invoices, ascertain if duty has been paid and if not collect it.

If duty is refused, they will make a seizure and report to you.

They will also keep a close watch for liquor, and if any is found, demand a permit to cover it. If a permit is not forthcoming, they will seize the liquor and report to you.

The detachment at the Five Finger Rapids Post will make a similar examination and report to the officer in command of the Line Post, who will report to you.

## TELEGRAPH CREEK AND TESLIN LAKE DETACHMENT.

One non-commissioned officer and six men and seven horses.

A non-commissioned officer and three men and four horses at Telegraph Creek.

## Department of the Interior.

Three constables and three horses at the head of Teslin Lake.

I am informed grass and hay can be had at these places.

The men of these posts, like the men on the Dalton Trail, should be well informed in customs work and tariff, the detachment at the head of the lake to have a good boat. It may be possible that you will find it difficult to direct the movements of these detachments owing to the irregular mail service. You had better ask Comptroller White to give them their instructions direct.

### RIVER POSTS.

Posts from Tagish to be maintained as follows:—

White Horse Rapids, three constables.

Foot of Lake Lebarge, three constables.

Junction at Hootalinqua and Lewes rivers, three constables.

Little Salmon River, three constables.

Posts to be established as early in the spring as possible:—

Foot of Marsh Lake near the McClintock River to keep up communication with the post on the Hootalinqua, 25 miles east, three constables.

Posts to be established during the summer:—

Head of Lake Lebarge, three constables.

Big Salmon River, three constables.

The swift waters of these rivers makes communication between posts very difficult, hence the necessity of having them not more than forty miles apart and not less than three men at each post, and to be used in winter as mail stations and a place of shelter for people moving between Dawson City and the coast.

### BOATS.

You will find sufficient boats at the Hootalinqua, Freeman's Point and the Little Salmon River to carry all the provisions and stores at these places to Dawson City; but pitch and oakum will have to be sent down to the foot of Lake Lebarge by horse or dog train, and from there to the Hootalinqua, Freeman's Point and the Little Salmon River by dog teams, to repair the boats and put them in order for taking the water in the spring.

Boats of not more than four tons capacity should be constructed at the foot of Lake Lebarge to carry from there not less than twenty-five or thirty thousand pounds of provisions, and be in readiness to sail at the earliest possible date to Dawson City. An effort should be made to reach there not later than the 20th of May. By this date all the provisions at Dawson City will have been consumed and the lives of the population in that district will be depending upon the early departure and safe arrival of these boats, and the boats which, I understand, are coming in with provisions on the first opening of navigation, on speculation.

The Lewes River is very low and dangerous in the spring, and men who have passed down it before should be selected to pilot the boats. There are a number at Tagish. Captain Starnes can give you their names, and he himself should be sent down in command. The same caution should be exercised in the manning of the early spring boats from Bennett, which should leave that point immediately the lake is clear of ice, and reach Dawson within fifteen days after the arrival of the Lebarge fleet. This fleet should have not less than twenty-five or thirty thousand pounds of provisions with it. These two fleets should be in readiness not later than the 1st of May. The Lewes River was open at this point last year (Big Salmon River) on the 3rd of May. Some fifty boats reached Dawson last

year on the 17th of May. We will expect your first boats not later than the 20th of May.

#### PROVISIONS.

The quantity of provisions required for the Government force in the Yukon District, estimating that it will not exceed 100 men between Bennett and Dawson from 15th July, 1898, to 15th July, 1899, will be 110,000 pounds. You will require to make requisition for this, and for 1,100 pounds for each additional man over that number.

#### LIQUOR.

I have received from the coast, from a number of people, applications for permits to import liquor into this district, some of the applications being from Canadians. They do not seem to understand that the tax must be paid on receipt of the permit, and have not inclosed funds to do this. As I shall be leaving for Dawson City in a very short time, I consider it better to depute to you the power to issue permits, and inclose herewith your authority to do so. A tax of \$2 per gallon will be paid when the permit is signed and handed over to the applicant. Please instruct your posts to notify people who are asking for permits to apply to you.

I am informed that there is a quantity of liquor at Tagish Post. Please advise me on whose permit it has been imported, the date of the permit and by whom granted. I am also informed that great quantities of liquor passed Tagish Post last summer and fall without permit. Give instructions for closer examination to be made of boats coming in this year, both at Tagish Post, White Horse Rapids and at the Hootalinqua.

#### DOGS.

You will have to arrange for a supply of dog feed next winter at safe places between Bennett and Selkirk, where fish are plentiful. I think fish can be obtained at Selkirk, Little Salmon River, Big Salmon River, foot of Lake Lebarge and Marsh Lake.

The dogs will have to summer some place outside, where food is cheap. Near the mouth of the McClintock River, on Marsh Lake, there is an island that might make a good runway for the dogs during the summer and where they could be fed very cheaply on fish.

We should not have to import or freight a pound of dog feed next winter.

#### MISCELLANEOUS.

I am sending by Captain Starnes a report and marked maps of the Dalton Trail, received by me from Mr. McArthur. From this you can ascertain about where the Dalton Line Post should be placed.

Advise me when the detachment is put out on the Dalton Trail.

Please instruct that all police boats en route to Dawson City will call at the Five Finger Rapids and Stewart River posts, and ask if any mail or orders have been left for them.

Please send any mail arriving for me and your communications by dog train up to as late date as possible; after that by any possible opportunity you can, and then by the boats coming down in the spring.

## Department of the Interior.

Arrange to send Captain Norwood down by first mail train. I cannot await his arrival here.

The detachment at Selkirk will examine all goods coming in over the Selkirk branch of the Dalton Trail, ask to see invoices, ascertain if duty has been paid, and if not, collect it. If duty is refused they will make a seizure and report to the non-commissioned officer in charge at the Five Finger Rapids Post, who will report to the officer in command at the Line Post on the Dalton Trail, who will report to you. They will also keep a close watch for liquor, and if any is found, demand a permit to cover it. If a permit is not forthcoming, they will seize the liquor and report as aforesaid.

### SCHEDULE B.

#### YUKON PROVISIONAL DISTRICT OF CANADA.

Under the powers vested in me by my commission as Chief Executive Officer of the Government of Canada in the Yukon District, North-west Territories, approved by His Excellency the Governor General on the 17th August, 1897.

For the purpose of providing a suitable Tribunal for the hearing and decision of disputes with regard to title in placer mining properties;

I hereby amend the "Regulations Governing Placer Mining in the Provisional District of the Yukon, North-west Territories (approved by Order in Council of 18th January, 1898)" by adding thereto the following sections:—

41. The Gold Commissioner and the Mining Inspectors for the District of the Yukon shall each have power to hear and determine all disputes with regard to mining property arising within the Yukon District subject to appeal by either of the parties, as follows:—

(a.) In case the appeal shall be from a decision of either of the Mining Inspectors it shall be heard by the Gold Commissioner of the Yukon District.

(b.) In case of an appeal from the decision of the Gold Commissioner it shall be heard by the Minister of the Interior of Canada.

(c.) There shall be an appeal to the Minister of the Interior not only from decisions by the Gold Commissioner on cases originally tried by him, but also on cases decided by him on appeal from decisions of either of the Mining Inspectors.

42. No particular forms of procedure shall be necessary, but the matter complained of must be properly expressed in writing; and a copy of the complaint served on the opposite party not less than seven days before the hearing of the matters contained in said complaint.

43. The complaint may by leave of the Gold Commissioner, or either of the said Mining Inspectors, be amended at any time before or during proceedings in connection with the trial thereof.

44. The complainant shall at the time of filing his complaint deposit therewith a bond-fee of twenty dollars, which shall be returned to him when the complaint proves to have been well founded, but not otherwise, except for special cause and then only by direction of the Gold Commissioner or either of said Inspectors.

45. In all cases of appeal the appellant shall at the time of lodging his appeal deposit at the office of the Gold Commissioner a bond-fee of twenty dollars, which shall be returned to the said appellant if his appeal proves to have been

well founded, and not otherwise, except for special cause, and then only by direction of the person hearing said appeal and rendering decision thereon.

46. The appeal must be in writing and must be filed at the office of the Gold Commissioner not more than twenty days after the decision appealed from has been communicated in writing to all the parties interested, and must state the ground upon which said decision is appealed from. Time shall not run against said appeal and the lodging thereof until said decision has been communicated in writing to all the parties interested, as aforesaid.

47. If the Gold Commissioner or either of said Inspectors decides that it is necessary to a proper decision of the matters in issue to have an investigation on the ground, or in cases of disputed boundaries or measurements to employ a Dominion surveyor to measure or survey the land in question, the expense of the inspection or re-measurement or re-survey, as the case may be, shall be borne by the litigants who shall pay into the hands of the person hearing said dispute in equal parts such sum as he may think sufficient for the case before it takes place; otherwise it shall not proceed, and the party who refuses to pay such sum shall be adjudged in default. The person hearing and deciding each such dispute shall subsequently determine in what proportion the said expense shall be borne by the parties respectively, and the surplusage, if any, shall then be returned to the parties, as he may order.

48. All bond-fees adjudged as forfeited and all payments retained under the last preceding section shall as soon as decision has been rendered, and all entry and other fees or moneys shall, as soon as they have been received under any of the foregoing sections, be paid by the recipient to the credit of the Receiver General in the same manner as other moneys received by him on account of Dominion lands.

49. For the purpose of enabling said Gold Commissioner and Mining Inspectors to properly dispose of every case brought before them under these regulations and compelling the attendance of witnesses where necessary, I hereby confer upon said Gold Commissioner and said Inspectors all the powers of a Justice of the Peace with reference to the issue of summonses requiring the attendance of witnesses, and also with reference to the issue of such warrants as may be necessary to compel the attendance of witnesses who disobey any such summons.

Given under my hand and seal of office this 2nd day of July, 1898.

(Seal.)

(Signed) J. M. WALSH,  
*Commissioner, Yukon District.*

I hereby further amend the regulations governing Placer Mining in the Provisional District of Yukon, North-west Territories (approved by Order in Council of 18th January, 1898), by adding thereto the following:—

41a. The Mining Recorder shall have power to hear and determine all disputes in regard to mining property arising within his district subject to appeal by either of the parties, to the same tribunals and in the same manner as in the case of an appeal from either of the Mining Inspectors.

(Signed) J. M. WALSH,  
*Commissioner, Yukon District.*

Dated at Dawson in the Yukon District,  
13th July, 1898.

## Department of the Interior.

### SCHEDULE C.

#### COMMISSIONER'S OFFICE.

Owing to the hardships incidental to the prospecting of distant streams such as the upper portion of the Stewart River and its tributaries, the Commissioner of the Yukon District has decided that the limit of four claims to each individual now in force in the Dawson District shall not apply in the Stewart River District, but that any free miner who shall stake, and do legitimate prospecting on any large tributary of the Stewart or McQuesten Rivers shall be entitled to entry for one claim on such tributary in addition to a claim on the main river.

It has been further decided by him that the Stewart River and its tributaries, together with the White River and other streams flowing into the Yukon River for a distance of sixty miles up stream from the mouth of the Stewart and down stream to the mouth of the Henderson Creek, comprise the Stewart River District.

That the Dawson District extend from the International Boundary on the north to the Henderson Creek on the south, including the Henderson and its tributaries.

That the Pelly River District extend from the Stewart River District to the Little Salmon River, including the Little Salmon and its tributaries.

That the Hootalinqua River District extend from the Little Salmon River to the northerly boundary of British Columbia.

(Signed) J. M. WALSH,  
*Commissioner, Yukon District.*

YUKON PROVISIONAL DISTRICT,  
19th July, 1898.

#### COPY OF MINERS' PETITION IN COMMISSIONER WALSH'S REPORT.

Whereas, it is evident that the memorial presented by the deputation sent out last winter by the miners of the Yukon District failed to impress upon the Government the necessity of amending the regulations governing the mining industry;

And whereas, it cannot be disputed that the application of the present laws has had the effect of almost paralyzing the industry, and that a continuance of the present regulations will result in the most disastrous effect next winter,—proven by the fact that a large majority of the best claims in the district were either worked at very small profit, in many cases at a loss, and that after that experience most of the miners have decided to suspend all operations on their claims other than those necessary to hold them;

And whereas, the sentiment of the public is unanimous that an immediate change in the regulations is necessary:

It has been deemed expedient to present the following resolutions before a mass meeting of the public in the Yukon, and that their voice on the subject shall be embodied in the memorial to the Government, signed by every one interested.

1. That no timber limit be issued to any individual or company on a creek where the timber may be necessary for the use and development of mines.



2. That should a free miner lose his certificate he should be able to substitute the same at any office that may hereafter be established in the Yukon.
3. That placer creek claims be enlarged in length to 500 feet as heretofore, and that the limitation of breadth be that of a line run along the rim rock parallel to the general course of the stream and which at every point is four feet above high water mark of the stream.
4. That to Clause 15 of the Mining Law be added the words "and number of certificate."
5. That Clauses 16 and 17, referring to the alternate claims, be absolutely struck out.
6. That a discoverer or discoverers be allowed one claim as a bonus and the right of each man besides of pre-empting one full claim as heretofore.
7. That Clause 25 be modified owing to its impracticability under some circumstances and the possibility of its affording the Miners' Recorder an opportunity of defrauding original stakers.
8. That the Clauses 30 and 31, referring to royalty, be absolutely abolished on the grounds of its injustice and paralyzing effect on the industries of the country.
9. That their attention be called to the too great extent of some of the districts, notably the Stewart and White rivers.
10. That the words in Clause 37, "upon which, however, the royalty prescribed by these regulations shall be payable," be eradicated.
11. That Clause 39 be strictly enforced, preserving the rights of prospectors to enter on any claims vacant through non-representation, and that clause be inserted that a miner be permitted to abandon his claim and re-stake in same district upon giving satisfactory proof to the Gold Commissioner or Recorder that his claim is worked out or cannot be worked at a profit.
12. That a company or miner owning two or more adjacent claims be allowed to consolidate their labour on one claim for the representation of each claim required by the regulations.
13. That a memorial, embodying these resolutions, be drafted for signature by all interested, and a copy of the same be presented by deputation to Major Walsh, and another transmitted to the leader of the Opposition in Ottawa.

(Signed) JOHN F. SUGRUE,  
*Chairman.*  
 And about 1,500 others.

"INDIAN CLIFF,"

BROCKVILLE, 20th September, 1898.

SIR,—In my report which I recently handed to you, you will notice that I call attention to the necessity of a telegraph line being constructed between Dawson City and the coast. I do not know of anything that is of more importance to the district than an improvement in the means of communication with the outside. A telegraph wire connecting Dawson City with the coast would mean that the district would be safe, to a great degree, from shortage of any articles required for the maintenance of life, or for the operation of the mines. The trouble now is that the people on the outside cannot be quickly informed of what the people on the inside require. Mail communication is so uncertain that no dependence can be placed upon orders sent by mail being promptly filled. Not only would a telegraph line serve the country in this way, but it would serve in many other ways

## Department of the Interior.

which would benefit the mining interests. There will always be a great many transactions involving large sums of money, and to have telegraphic communication to the coast from whence it can be carried in three or four days by steamer to Vancouver, and there wired to any part of the world, would afford a great boon to the mining interests of the district.

Again, it would be of great service to the Government. A connection of the posts from the coasts to Dawson City by wire would permit of the present police force being reduced by 100 men, and—what would be of still greater importance—the Department could be kept thoroughly and promptly informed upon all matters occurring in the district.

There is no doubt in my mind that such a telegraph line would pay good interest on capital invested, from its opening.

Yours very truly,

(Signed) J. M. WALSH.

### REPORT OF JAS. D. MCGREGOR.

BRANDON, November 15th, 1898.

The Honourable  
The Minister of the Interior.

SIR,—Herewith I beg to submit report of the duties performed by me in the Yukon Provisional District:—

On arrival at Skagway on October 8th, 1897, under instructions from Major Walsh, I assisted Major Wood in the transportation of supplies over the pass to Lake Bennett until Major Walsh and the party left for Dawson. My instructions were to proceed to Bennett, and as soon as the ice formed, to follow the party with fourteen horses and sleds, and twelve dog trains of four dogs each, loaded with supplies and dog feed, to provision the different posts. In accordance therewith, I left Bennett on December 24th, this being the earliest date on which the ice was safe to travel, arriving at Tagish on January 2nd, 1898.

On account of the quantity of stuff required to be moved, I had to go over the trail three times. Part of the freight was left at Tagish while I made a single trip through to the head of the Cañon, arriving there on the night of January 4th. Next morning I sent the horses back to Tagish to bring forward the balance of freight.

I found the Cañon and Rapids open, but after prospecting for a day found that by cutting four miles of a trail through scrub and light timber, a road could be made around the Cañon to the head of the rapids, where we encountered a serious difficulty in the way of an almost perpendicular hill, to surmount which it was necessary to use block and tackle. This caused so much delay that it took seven days to cover four miles.

On the morning of the 13th January I left the rapids, and arrived at the foot of Lake La Barge on the night of the 16th. Here I met Mr. Patullo, who brought instructions from Major Walsh for me to report to him at Big Salmon immediately. Before starting I laid out a site for a warehouse, and set the men to work on its construction, arriving at Big Salmon on the 21st. Here I received instructions to return to La Barge, store provisions, and send horse teams back to the head of Lake Bennett for more supplies in charge of Corporal Pringle.

After laying out a timber reserve, I returned to Big Salmon with ten dog teams of four dogs each, arriving there on the 30th January. Here I loaded up all accumulated

mail matter, and accompanied by Captain Bliss started for Little Salmon on the 31st with instructions to pick up the mail which had been frozen in with Captain Starnes boats. Reached Little Salmon on the 2nd February.

We were here joined by Judge McGuire and Mr. F. C. Wade, and after taking on 21 days supplies for fourteen men and forty dogs (this with the 1,600 lbs. of mail, bedding, baggage and camp equipment, making a total of 600 lbs. to each team of four dogs) made a start for Dawson on February 5th.

Arrived at Fort Selkirk on February 14th, and in accordance with instructions staked out a town site reserve.

Left there on the 16th, and reached Dawson on the 26th. Notwithstanding the fact of our being so heavily encumbered with mail matter, &c., &c., we were the first to reach Dawson from the outside, none others reaching there for two weeks afterwards.

Immediately on arriving at Dawson City I handed over the mail, dog teams, &c., to Captain Constantine, the officer commanding Mounted Police, and reported myself for duty to Gold Commissioner Fawcett, and by his direction at once commenced to make a general inspection of all the working mines on the various creeks. This completed, I returned to Dawson, and for the next month was busily engaged in collecting timber dues, issuing timber permits and miners' licenses, and in the other duties devolving on my position.

Inspector Horwood having arrived, an office was established at the forks of El Dorado and Bonanza Creeks for the collection of royalties, he remaining there permanently.

On account of two discoveries having been recorded on Dominion Creek, and claims overlapping, I was sent over there to take evidence in the different cases. By the time this was completed, the "wash up" had commenced, which now took up all the time at my disposal in the collection of royalties, adjudicating on disputes, the taking of affidavits as to representation, and my other duties generally until leaving Dawson on July 26th.

I have the honour to remain,

Your obedient servant,

JAS. D. MCGREGOR.

*Inspector of Mines,*

Yukon District.

Department of the Interior.

PART V.

ROCKY MOUNTAINS PARK



## Department of the Interior.

### ROCKY MOUNTAINS PARK OF CANADA.

BANFF, 19TH NOVEMBER, 1898.

The HON. CLIFFORD SIFTON,  
Minister of the Interior,  
Ottawa.

SIR,—I have the honour to report on the works and other particulars connected with the Rocky Mountains Park for the twelve months ended the 31st of October, 1898.

#### ROADS.

The usual repairs were made on the roads during the spring and summer, such as clearing away the fallen rock, repairing damages caused by freshets, &c.

Most of these roads have been in use for ten or twelve years, and each year calls for additional repairs. The culverts and smaller bridges built of such timber as this section of the mountain affords cannot be expected to last more than ten years. Consequently the annual repairs are becoming more necessary, with frequent and careful inspections to prevent accidents. Several paths were constructed during the year leading to points of attraction, and a number of rustic seats placed on the different roads and paths.

#### TIMBER.

As usual each year, after the regular work has been stopped by the frost a certain amount of clearing away of dead and fallen timber on the sides of the road has been done. The removal of this brush, &c., constitutes part of the work of repairs.

#### FLOODS.

There was no damage done last spring by the floods in the rivers of the park, the water not rising beyond its usual limits.

#### FIRES.

No fires have occurred in the park during the year. This is partly owing to the frequent showers during the summer, and partly to the removal of the dead timber each year.

#### BRIDGES.

The piers and abutments of the bridge over the Bow River were repaired during the summer by building cribbing around the stone work and the bridge was overhauled generally.

#### HAY.

Tenders were called for as usual for the hay crop on the meadows of the park, and the highest tender accepted. The crop was about the usual average.

## MUSEUM.

The museum continues to be a source of attraction to visitors, over 1,300 persons having resorted there during the season, the summer months exclusively.

Many articles are still necessary to make the exhibit complete, which it is to be hoped may be secured at an early day.

## BUFFALO.

In my last report I referred to the three buffalo which had just arrived, and the contemplated addition from the herd of Lord Strathcona. The three were wintered here without danger or much trouble, and were in excellent condition in the spring.

Thirteen head arrived from Winnipeg about the middle of June, just after I had completed an excellent inclosure of about 500 acres of beautiful park land, about one and a half miles east of the Canadian Pacific Railway station, adjoining both railway and driving road, and the whole herd of 16 occupy the same and have excellent pasturage and pure water during summer, and are now in prime condition.

I am now erecting partially inclosed sheds for winter shelter, and have sufficient hay put up for feed, so that I anticipate no great difficulty in preserving and enlarging the herd for the future.

The buffalo have been a never failing source of interest to all visitors to the park, and more particularly perhaps to visitors from foreign lands, which class of travel I have considered to be most valuable to encourage owing to their large expenditure, not only here but in other parts of the Dominion, and I consider that the money spent on the buffalo, as well as any additional money that may be spent in rendering Banff more attractive as a place of call for the travelling public, will prove not only a present but permanent valuable investment, and will add largely to the wealth of the Dominion generally.

## VISITORS.

It was expected that the usual increase of visitors to the park during the year would be realized, but the uneasiness caused by the war at once told on the travelling public, and I have ascertained that many persons who contemplated coming to Banff had postponed their visit until next year. Still, the number exceeded those of any previous year, and there is no reason to doubt the increasing popularity of the park as a resort of health and pleasure.

During the last season in addition to ordinary travel Banff was visited by the representatives of the press from the States of Minnesota, Wisconsin and Michigan, all of whom to the number of about 400 spent a short time in Banff, and were given an opportunity of judging of its advantages as a health and pleasure resort. Judging by the expression of feeling at the time, and the reports furnished by each member of the party, and published broadcast on their return home, they were unanimous in praising the place, and I should judge the future will show the great and permanent value of this means of advertising the country, and that large results will be realized from the comparatively small outlay occasioned by their presence.

## FUTURE REQUIREMENTS.

The reputation of the park is increasing yearly, the beauties of its scenery, the healing powers of its springs, and the salubrity of its atmosphere are known and recognized all over the globe. Representatives from all parts visit this place annually, and no expression of disappointment has yet been heard as to the natural advantages of the park, with the exception perhaps of the enthusiastic sportsman who thinks his interests are not sufficiently recognized.

In my annual report of last year I referred to this matter, and suggested the extension of the bridle roads through the several passes leading up from the Bow

## Department of the Interior.

Valley. I am aware that this could not be done under the present Park Act, and the annual appropriation for works in the park must be expended within the limits laid down therein.

These bridle roads, however, are of such importance to the park, and their necessity so generally remarked upon by tourists, sportsmen and others coming here that it is suggested that the bounds of the park should be extended to take in the water-shed of the Bow River.

This extension of the limits of the park does not necessarily involve any additional expense or outlay, further than is required to make these bridle roads passable for pack horses. The extension of the limits would be simply to create a reservation or preserve for game to be controlled by the park management.

The benefit of and necessity for extensive park reservation in the country are becoming generally admitted. The provinces of Ontario and Quebec have now each very extensive tracts reserved for the protection and propagation of game, fish, &c.

These reservations far exceed in area the National Park of Canada at Banff.

It is suggested, therefore, that the time has arrived when an additional tract should be included in the bounds of the Rocky Mountains Park, particularly when this outlying tract contains scenery and other attractions not excelled in any other part of the continent of America.

The customary meteorological tables are appended.

I have the honour to be, Sir,

Your obedient servant,

H. DOUGLAS,  
*Superintendent.*

### CANADIAN PACIFIC HOTEL.

VISITORS from 11th May, 1898, to 7th October, 1898.

From where.	Number.
United States.....	1,152
Canada.....	633
England.....	267
Australia.....	47
China.....	37
Scotland.....	33
Germany.....	23
New Zealand.....	23
Japan.....	14
India.....	12
Hawaiian Islands.....	10
Ireland.....	8
South Africa.....	7
France.....	4
West Indies.....	3
Egypt.....	2
Transvaal.....	2
Russia.....	3
Austria.....	2
Cuba.....	2
North Borneo.....	1
Channel Islands.....	1
Ceylon.....	1
Tasmania.....	1
Mexico.....	1
Java.....	1
Total.....	2,290



## SANITARIUM.

VISITORS from 31st October, 1897, to 31st October, 1898.

From where.	Number.
Canada.....	1,874
United States.....	113
England.....	83
Japan.....	14
Australia.....	11
New Zealand.....	9
India.....	5
Germany.....	5
Scotland.....	3
China.....	2
France.....	2
Hawaiian Islands.....	5
Wales.....	2
Ireland.....	1
Tasmania.....	1
Argentine Republic.....	1
Total.....	2,131

## BEATTIE'S HOTEL.

VISITORS from 31st October, 1897, to 31st October, 1898.

From where.	Number.
Canada.....	428
United States.....	18
England.....	3
Wales.....	1
Scotland.....	1
Total.....	451

## GRAND VIEW HOTEL, HOT SPRINGS.

VISITORS from 31st October, 1897, to 31st October, 1898.

From where.	Number.
Canada.....	318
United States.....	32
New Zealand.....	7
England.....	4
Japan.....	4
Total.....	365

# Department of the Interior.

## MUSEUM.

VISITORS from 31st October, 1897, to 31st October, 1898.

From where.	Number.
Canada.....	789
United States.....	295
England.....	122
Australia.....	26
China.....	18
Scotland.....	15
Wales.....	11
Germany.....	10
Japan.....	9
New Zealand.....	8
India.....	7
Hawaiian Islands.....	6
Ireland.....	5
South Africa.....	2
France.....	1
Tasmania.....	1
Samoa Island.....	1
Austria.....	1
Russia.....	1
East Indies.....	1
Total.....	1,329

TOTAL number of Visitors to the Rocky Mountains Park of Canada, from 31st October, 1897, to 31st October, 1898.

Canadian Pacific Hotel.....	2,290
Sanitarium.....	2,131
Beattie's Hotel.....	451
Grand View Hotel.....	365
Summer visitors residing in cottages and boarding houses, about.....	300
Total.....	5,537

H. DOUGLAS,  
*Superintendent.*

## CARETAKER OF THE CAVE AND BASIN'S ANNUAL REPORT.

SHOWING Number and Nationality of Visitors from 1st November, 1897, to 31st October 1898.

From where.	Number.
Canada .....	1,366
England.....	223
Scotland.....	48
Ireland.....	9
Australia.....	38
New South Wales.....	19
New Zealand.....	21
South Africa.....	10
India.....	34
United States.....	721
Honolulu.....	13
Mexico.....	2
Argentine Republic.....	2
China.....	20
Japan.....	22
France.....	2
Germany.....	10
Austria.....	2
Belgium.....	2
Sweden.....	10
Holland.....	3
Algiers.....	1
Total.....	2,578

D. D. GALLETLY,

*Caretaker Cave and Basin.*

# Department of the Interior.

## ROCKY MOUNTAINS PARK.

MAXIMUM and Minimum Temperatures and the general state of the Weather between  
17th November, 1897, and 8th November, 1898.

DATE.	THERMOMETER READINGS.				Weather.	DATE.	THERMOMETER READINGS.				Weather.
	Maximum.		Minimum.				Maximum.		Minimum.		
	6 a.m.	6 p.m.	6 a.m.	6 p.m.			6 a.m.	6 p.m.	6 a.m.	6 p.m.	
1897.	°	°	°	°		1897.	°	°	°	°	
ov. 17.	19.8	15.0	15.8	8.5	Cloudy, snow.	Dec. 22.	21.5	25.8	15.2	16.2	Fair, very squally wind
" 18.	9.2	33.2	4.5	9.2	Cloudy, snow, sleet & rain.	" 23.	20.8	24.8	15.8	17.2	Fair, very squally wind
" 19.	38.0	25.5	20.0	16.8	Cloudy, flurries of snow.	" 24.	22.0	28.0	18.8	22.2	Cloudy.
" 20.	17.0	10.5	3.8	4.6	Fair.	" 25.	26.5	30.5	23.2	25.5	Fair.
" 21.	4.2	0.5	18.6	20.6	"	" 26.	29.0	31.2	26.8	27.5	"
" 22.	8.5	13.0	13.2	10.4	"	" 27.	28.8	35.0	26.0	26.0	Cloudy, rain and snow.
" 23.	6.0	6.5	11.2	13.2	"	" 28.	35.5	37.8	31.0	33.0	Cloudy, rain and snow.
" 24.	3.0	15.2	8.4	10.0	"	" 29.	34.5	30.5	24.8	24.2	Cloudy, lt snow
" 25.	10.8	9.2	1.5	3.8	Clod.	" 30.	25.0	17.0	8.2	5.0	Fair.
" 26.	4.2	6.2	10.5	15.5	Fair.	" 31.	7.2	13.8	7.6	10.0	"
" 27.	15.2	17.2	33.9	36.8	"	1898.					
" 28.	19.4	3.8	25.5	23.9	" squally, wind.	Jan. 1.	17.5	26.8	5.2	16.2	"
" 29.	2.5	7.0	1.2	2.0	Cloudy, snow, very squally wind.	" 2.	25.5	27.2	17.2	14.8	"
" 30.	1.5	0.8	6.3	7.3	Cloudy, snow.	" 3.	27.2	28.2	19.8	16.8	"
Dec. 1.	2.0	2.0	15.5	17.5	Fair.	" 4.	24.8	24.8	2.8	0.5	"
" 2.	3.0	16.0	13.0	14.3	Fair, squally wind.	" 5.	22.8	27.8	20.5	19.0	"
" 3.	18.5	27.0	9.8	15.8	Cloudy, very squally wind	" 6.	24.5	25.2	14.8	12.8	"
" 4.	26.2	26.0	18.5	17.8	Cloudy, squally wind.	" 7.	20.8	25.2	0.8	12.5	"
" 5.	27.0	34.0	20.2	27.0	Cloudy, snow flurries.	" 8.	28.0	21.2	14.8	8.5	"
" 6.	32.5	30.0	26.5	23.0	Cloudy, lt snow	" 9.	16.0	10.2	4.5	7.9	"
" 7.	30.5	37.2	27.8	30.5	" "	" 10.	4.8	18.0	8.9	4.5	Cloudy.
" 8.	31.5	35.2	28.0	30.5	Fair, snow flurries.	" 11.	17.5	18.2	10.0	10.0	Fair, squally wind.
" 9.	34.8	33.0	26.8	26.8	Fair, snow flurries.	" 12.	15.8	22.8	7.5	8.5	Cloudy.
" 10.	29.8	30.0	25.2	25.5	Fair.	" 13.	20.8	20.0	13.8	12.8	Fair.
" 11.	30.5	30.2	25.2	21.8	Cloudy.	" 14.	15.5	22.8	5.0	14.2	"
" 12.	26.5	34.2	21.5	19.5	Fair, snow flurries.	" 15.	21.8	25.0	10.8	10.0	"
" 13.	29.8	22.8	16.0	15.8	Cloudy, snow.	" 16.	17.8	20.5	.....	1.5	"
" 14.	21.8	4.2	6.0	.....	Cloudy, lt snow	" 17.	20.0	25.2	6.5	6.5	"
" 15.	0.2	16.0	22.2	27.3	Fair.	" 18.	24.2	29.8	22.5	24.0	Cloudy, squally wind.
" 16.	21.8	4.5	29.6	27.5	Fair, squally wind.	" 19.	27.2	29.8	21.5	17.8	Fair.
" 17.	3.2	7.5	15.1	7.9	Cloudy, snow flurries.	" 20.	28.2	26.8	8.2	4.8	"
" 18.	7.8	14.0	5.2	2.8	Fair.	" 21.	23.0	24.8	3.0	5.5	"
" 19.	13.0	16.2	0.2	5.5	Fair, squally wind.	" 22.	23.5	24.8	12.8	9.0	"
" 20.	10.8	15.0	8.2	8.2	Fair, squally wind.	" 23.	23.2	18.0	17.5	10.2	"
" 21.	14.0	22.2	10.2	10.5	Fair, very squally wind	" 24.	10.2	18.8	4.8	6.5	Cloudy, lt snow
						" 25.	15.8	17.5	5.2	3.8	Fair.
						" 26.	16.8	24.5	10.5	15.8	Fair, snow flurries.
						" 27.	22.8	25.8	15.8	15.8	Fair, snow flurries.
						" 28.	23.8	21.8	0.5	1.2	Fair.
						" 29.	20.0	28.2	16.8	18.8	Cloudy, lt snow

Maximum and Minimum Temperatures, &c.—Continued.

DATE.	THERMOMETER READINGS.				Weather.	DATE.	THERMOMETER READINGS.				Weather.
	Maximum.		Minimum.				Maximum.		Minimum.		
	6 a.m.	6 p.m.	6 a.m.	6 p.m.			6 a.m.	6 p.m.	6 a.m.	6 p.m.	
1898.	°	°	°	°		°	°	°	°		
Jan. 30.	26.5	30.2	23.2	23.2	Cloudy.	Mar. 27.	18.5	30.0	-8.4	-5.3	Fair.
" 31.	23.2	22.8	10.5	6.2	Fair.	" 28.	27.0	33.2	0.8	1.5	"
Feb. 1.	17.5	13.2	7.8	5.5	Fair, lt. snow.	" 29.	29.5	35.0	2.0	3.5	Cloudy.
" 2.	6.5	28.5	2.8	4.0	Fair, squally wind.	" 30.	31.5	35.8	4.2	3.0	Fair.
" 3.	26.2	23.5	8.0	11.8	Clo'dy, lt. snow	" 31.	32.8	35.2	7.5	6.2	"
" 4.	23.5	31.2	16.5	15.0	Cloudy.	April 1.	31.5	43.2	11.2	11.0	"
" 5.	28.5	30.8	25.8	25.8	Cloudy, snow.	" 2.	41.5	38.5	24.8	26.0	Cloudy, snow.
" 6.	29.8	35.0	14.8	12.2	Cloudy, snow.	" 3.	36.8	42.5	7.8	7.8	Fair.
" 7.	33.5	37.5	29.5	29.0	Clo'dy, lt. snow	" 4.	40.5	45.8	11.5	11.2	"
" 8.	33.5	31.5	23.5	22.2	Fair, snow.	" 5.	41.8	49.9	14.2	14.5	"
" 9.	26.8	30.8	12.2	16.5	Fair.	" 6.	40.8	48.6	20.5	19.0	"
" 10.	27.8	32.2	17.0	13.5	Cloudy, snow furrries.	" 7.	40.5	39.8	24.0	31.5	Cloudy.
" 11.	32.8	39.2	29.0	30.2	Fair, lt. snow.	" 8.	37.0	39.8	29.2	29.0	Fair.
" 12.	35.8	36.8	30.5	31.5	Fair.	" 9.	37.2	49.9	23.0	25.0	Cloudy, rain.
" 13.	31.8	33.0	28.0	28.8	Cloudy, snow.	" 10.	44.5	42.0	34.0	33.8	Fair, rain and snow.
" 14.	34.5	32.5	27.5	26.8	Clo'dy, lt. snow	" 11.	40.0	42.5	30.2	31.5	Fair.
" 15.	29.2	14.8	8.5	5.0	Cloudy, snow.	" 12.	39.5	49.6	23.8	24.5	"
" 16.	17.2	2.2	2.5	7.1	Fair, lt. snow.	" 13.	48.9	53.3	32.6	40.6	"
" 17.	-0.5	8.5	-15.8	-9.5	Clo'dy, lt. snow	" 14.	48.3	40.2	32.6	34.0	Cloudy, snow and rain.
" 18.	4.8	-5.2	-10.7	-11.4	Cloudy, snow.	" 15.	36.8	40.2	30.2	31.0	Cloudy, rain and snow.
" 19.	-7.2	-0.8	-20.6	-23.2	Fair.	" 16.	38.5	47.8	23.5	24.0	Fair.
" 20.	11.2	34.2	-13.4	11.2	Clo'dy, lt. snow	" 17.	45.0	44.0	30.5	29.8	Fair, lt. snow.
" 21.	32.8	29.5	20.2	21.5	Cloudy, snow.	" 18.	39.5	38.8	25.0	24.8	"
" 22.	27.5	25.8	3.2	1.8	Fair.	" 19.	37.5	42.8	14.2	14.2	Fair.
" 23.	21.5	29.8	-6.3	-7.6	"	" 20.	41.8	44.5	32.0	32.5	Cloudy, snow furrries.
" 24.	19.5	31.8	-2.0	-3.2	"	" 21.	42.0	44.8	23.2	24.2	Cloudy.
" 25.	25.5	40.0	17.0	19.5	"	" 22.	43.5	47.2	32.5	34.5	Fair, lt. rain and snow.
" 26.	35.5	36.8	16.5	14.0	"	" 23.	44.0	48.3	32.2	35.5	Cloudy, snow furrries.
" 27.	30.5	40.0	10.2	10.2	"	" 24.	48.0	56.1	30.8	31.2	Fair, squally wind.
" 28.	36.8	44.2	12.0	11.0	"	" 25.	54.9	65.1	46.0	46.8	Fair, squally wind.
Mar. 1.	41.8	40.8	23.8	26.0	"	" 26.	57.6	48.4	35.0	35.2	Cloudy, light rain, snow.
" 2.	34.5	34.2	20.5	20.2	Cloudy, snow.	" 27.	46.0	50.6	30.2	30.5	Fair, squally wind.
" 3.	27.8	28.2	20.8	20.2	Fair, snow.	" 28.	49.5	39.0	32.2	32.0	Clo'dy, lt. snow
" 4.	24.5	33.0	11.5	10.8	Fair.	" 29.	35.8	43.2	28.5	28.2	Clo'dy, lt. snow.
" 5.	31.5	38.5	6.5	6.2	Fair, squally wind.	" 30.	37.5	45.2	30.5	30.2	Fair, lt. snow.
" 6.	35.8	41.2	21.2	21.2	Cloudy, squ'ly wind.	May 1.	44.5	51.9	20.8	20.9	Fair.
" 7.	38.8	24.0	20.5	19.5	Cloudy, snow.	" 2.	49.9	52.9	33.2	34.5	"
" 8.	21.8	27.2	-4.6	-3.2	Cloudy, squ'ly wind.	" 3.	51.9	59.4	28.5	28.8	"
" 9.	24.8	30.0	1.5	0.5	Fair.	" 4.	57.3	56.9	26.0	26.6	" swallows around.
" 10.	25.0	34.8	21.2	18.2	"	" 5.	50.9	52.9	25.5	26.5	Fair.
" 11.	32.0	35.0	23.5	26.5	Fair, lt. snow.	" 6.	51.6	57.3	26.5	28.2	Cloudy, rain.
" 12.	31.8	31.8	3.8	4.8	Cloudy.	" 7.	47.5	42.9	35.0	35.2	Fair, lt. snow.
" 13.	29.5	29.0	18.5	17.2	Clo'dy, lt. snow	" 8.	47.5	49.9	35.2	33.0	Cloudy, squally wind.
" 14.	27.8	31.8	14.8	12.2	Cloudy, snow.	" 9.	37.8	60.2	30.0	33.2	Cloudy.
" 15.	26.8	26.8	11.8	11.0	Cloudy.	" 10.	56.9	60.4	35.2	36.2	Fair, lt. rain.
" 16.	22.5	29.5	-1.5	-3.5	Fair.	" 11.	55.9	60.4	27.8	29.5	Cloudy, rain.
" 17.	26.8	30.0	8.0	6.2	"	" 12.	57.9	43.8	34.0	34.2	"
" 18.	26.5	31.0	1.2	5.2	Clo'dy, lt. snow	" 13.	43.0	60.7	33.5	34.2	Fair.
" 19.	23.5	32.8	3.2	15.5	Cloudy.	" 14.	56.1	65.0	28.2	29.5	"
" 20.	27.2	14.0	12.5	8.2	Cloudy, snow.	" 15.	63.0	66.8	28.2	29.8	" sq'ly wind
" 21.	8.5	14.2	-14.5	-16.5	Fair.						
" 22.	13.5	24.0	-15.1	-13.0	Fair, squally wind.						
" 23.	23.0	30.5	19.8	21.0	Cloudy.						
" 24.	28.0	6.2	3.5	1.2	Fair, snow.						
" 25.	2.8	5.2	-21.6	-20.6	Fair.						
" 26.	1.8	20.8	-26.3	-27.3	"						

# Department of the Interior.

## MAXIMUM and Minimum Temperatures, &c.—Continued.

DATE.	THERMOMETER READINGS.				Weather.	DATE.	THERMOMETER READINGS.				Weather.	
	Maximum.		Minimum.				Maximum.	Minimum.	Maximum.			Minimum.
	6 a.m.	6 p.m.	6 a.m.	6 p.m.					6 a.m.	6 p.m.		
1898.	°	°	°	°		1898.	°	°	°	°		
May 16.	60.7	66.2	34.5	35.5	Fair.	July 12.	75.4	84.8	46.1	51.5	Fair thun'strm	
" 17.	60.7	66.0	30.2	31.5	"	" 13.	79.0	81.0	49.2	49.8	Cloudy, thund- er storm.	
" 18.	61.7	59.2	36.2	37.0	" lt. rain.	" 14.	72.7	71.0	53.5	54.2	Fair.	
" 19.	52.5	44.8	32.8	33.5	Cl'ody, lt. rain.	" 15.	68.7	75.2	39.4	43.2	"	
" 20.	39.8	53.6	36.2	36.5	Cloudy, hail.	" 16.	68.4	81.5	38.0	41.8	Cloudy, rain, thunder.	
" 21.	49.8	57.9	28.2	31.5	Fair, sq'ly wind	" 17.	64.2	45.0	44.8	41.5	Cloudy, rain.	
" 22.	52.9	62.4	34.8	35.0	" rain.	" 18.	42.0	45.6	39.2	40.2	"	
" 23.	56.6	54.6	29.5	30.5	"	" 19.	42.0	50.5	41.0	42.8	"	
" 24.	52.6	64.0	28.0	29.5	"	" 20.	45.8	54.1	40.0	41.8	"	
" 25.	60.6	72.4	28.2	29.8	"	" 21.	51.1	62.4	41.0	42.8	Cloudy, lt. rn.	
" 26.	68.0	69.0	33.8	34.5	" vy lt. rain.	" 22.	56.9	71.8	35.5	39.8	Fair.	
" 27.	57.6	52.1	49.0	48.8	Cl'ody, lt. rain.	" 23.	69.4	72.2	39.0	43.8	"	
" 28.	48.9	47.5	36.8	36.8	"	" 24.	67.7	77.4	38.5	38.8	"	
" 29.	45.2	55.9	36.2	36.8	Fair, lt. rain.	" 25.	75.2	71.4	41.3	42.5	" rn, t'der.	
" 30.	50.2	46.0	28.8	30.8	Cl'y, rain, snow	" 26.	68.2	64.4	51.5	51.8	"	
" 31.	34.5	45.9	32.8	33.2	"	" 27.	60.7	63.0	50.6	51.0	Cloudy, lt. rn.	
June 1.	42.8	46.5	33.8	34.5	Cloudy, rain.	" 28.	61.2	68.7	39.8	40.2	Fair.	
" 2.	46.8	50.6	33.0	35.8	" lt. rain.	" 29.	63.4	72.5	37.2	37.2	" lt. rain.	
" 3.	47.8	58.4	32.0	34.2	"	" 30.	67.5	76.0	40.0	39.8	"	
" 4.	54.1	69.2	30.2	31.2	Fair.	" 31.	73.0	72.0	37.8	38.2	"	
" 5.	66.7	71.3	32.0	33.5	"	Aug. 1.	70.5	77.0	44.0	44.8	"	
" 6.	67.4	73.4	34.2	35.8	"	" 2.	72.4	82.8	43.5	44.5	" lightning	
" 7.	69.5	75.6	36.0	37.8	"	" 3.	80.7	65.0	53.1	52.2	Cloudy, thund- er, rain.	
" 8.	72.5	75.4	37.0	39.5	"	" 4.	53.6	63.8	39.0	42.0	Fair, rain.	
" 9.	69.5	76.4	38.5	40.0	Cloudy, thund- er storm.	" 5.	62.0	78.0	38.0	39.5	"	
" 10.	67.5	46.0	45.2	42.6	Cloudy, thund- er storm.	" 6.	76.2	79.2	42.2	42.8	"	
" 11.	42.6	53.9	35.0	35.2	Cloudy.	" 7.	75.7	85.2	44.5	45.5	"	
" 12.	52.4	47.1	43.8	38.8	"	" 8.	82.7	81.2	46.0	46.5	" thunder, slightsmoke.	
" 13.	38.8	47.9	33.0	33.8	" rain.	" 9.	73.4	84.8	42.8	42.5	Fair, smoky.	
" 14.	46.0	60.7	39.2	40.0	Fair, lt. rain.	" 10.	78.6	82.1	46.0	46.2	"	
" 15.	59.7	62.8	37.8	41.8	Cloudy, lt. rain	" 11.	79.7	74.7	47.8	47.8	" t'der.	
" 16.	56.6	64.3	46.8	48.8	Fair, lt. rain.	" 12.	72.7	73.4	50.0	50.2	"	
" 17.	61.4	67.4	35.8	39.8	"	" 13.	72.7	77.2	45.8	46.0	"	
" 18.	62.7	80.1	42.2	46.2	" thun'str'm	" 14.	75.4	78.0	38.5	39.2	" ltn'g.	
" 19.	74.7	68.0	48.0	52.0	" rain.	" 15.	71.7	69.2	40.2	41.2	" rain, lightning.	
" 20.	59.4	64.0	40.0	47.0	" lt. rain.	" 16.	66.7	71.4	49.0	50.5	Fair.	
" 21.	48.0	62.2	42.9	44.8	"	" 17.	71.0	75.2	37.5	37.5	"	
" 22.	59.4	62.7	33.0	37.2	"	" 18.	73.2	76.3	37.0	37.8	"	
" 23.	59.7	69.0	32.8	38.8	"	" 19.	74.7	79.4	41.3	42.5	Cloudy, thund- er storm.	
" 24.	64.7	59.7	48.8	49.8	Cloudy, rain.	" 20.	66.7	78.0	42.1	42.2	Fair.	
" 25.	54.9	59.1	42.0	45.2	"	" 21.	76.2	65.4	49.0	49.5	Cloudy, t'der, light rain.	
" 26.	54.6	64.3	42.8	45.5	Fair, sq'ly wind	" 22.	64.4	68.3	50.0	50.5	Fair, smoky.	
" 27.	59.4	67.1	34.8	41.8	Fair, rain, vy squally wind	" 23.	64.7	76.3	40.8	40.8	"	
" 28.	50.7	57.9	37.0	38.5	Cloudy, rain.	" 24.	67.7	77.7	42.2	42.8	"	
" 29.	54.9	58.2	42.2	43.5	Fair, lt. rain.	" 25.	76.2	78.5	43.5	43.8	"	
" 30.	53.3	70.0	34.0	35.8	"	" 26.	75.6	75.0	45.2	45.5	" rn, s'ky.	
July 1.	66.4	69.2	35.8	38.5	"	" 27.	70.6	70.3	45.2	46.5	" smoky.	
" 2.	70.0	77.2	39.0	43.2	"	" 28.	67.7	70.0	40.0	40.5	" lt rain, vy squally wind	
" 3.	72.7	77.3	39.5	44.2	" rain, and sq'ly wind.	" 29.	64.4	62.7	32.0	32.5	Fair.	
" 4.	67.2	71.2	43.1	46.2	Fair, rain and sq'ly wind.	" 30.	59.6	44.8	45.2	41.0	Cloudy, rain.	
" 5.	66.4	55.6	43.5	45.8	Cl'ody lt. rain.	" 31.	41.8	49.5	38.0	38.0	"	
" 6.	52.6	61.0	37.8	40.8	" rain.	Sept. 1.	45.8	59.0	35.8	36.2	Fair, rain.	
" 7.	56.9	71.4	30.5	34.5	Fair.	" 2.	54.9	57.9	31.2	31.5	" lt. rain.	
" 8.	69.0	79.0	33.0	38.0	"	" 3.	53.9	53.2	39.2	40.0	Cloudy, rain.	
" 9.	75.7	80.0	36.2	40.8	"							
" 10.	73.7	81.4	47.2	51.8	"							
" 11.	76.4	85.3	42.2	46.5	" lightning.							

MAXIMUM and Minimum Temperatures, &c.—*Concluded.*

DATE.	THERMOMETER READINGS.				Weather.	DATE.	THERMOMETER READINGS.				Weather.	
	Maximum.		Minimum.				Maximum.		Minimum.			
	6 a.m.	6 p.m.	6 a.m.	6 p.m.			6 a.m.	6 p.m.	6 a.m.	6 p.m.		
1898.	°	°	°	°		1898.	°	°	°	°		
Sept. 4.	50.9	52.9	38.0	38.5	Fair	Lightning	Oct. 11.	40.8	47.0	35.5	34.8	Fr, snw flurries
" 5.	40.8	54.6	28.5	28.5	"	"	" 12.	39.2	43.5	26.5	25.8	Fair.
" 6.	52.3	64.0	34.8	34.8	"	"	" 13.	39.9	46.5	39.2	38.5	"
" 7.	58.6	67.4	31.8	31.8	"	lt. rain.	" 14.	42.8	39.8	34.8	34.0	Cloudy, rain & part snow.
" 8.	59.4	61.4	36.8	37.0	"	"	" 15.	35.8	40.2	29.8	29.2	Fair.
" 9.	56.6	67.4	31.0	31.2	"	prfct day	" 16.	37.8	39.8	23.5	22.5	"
" 10.	59.7	73.3	31.8	32.0	"	"	" 17.	32.8	48.0	27.5	26.0	Fair, snow flurries.
" 11.	61.7	72.2	33.0	33.5	"	"	" 18.	37.2	43.2	33.5	30.0	"
" 12.	65.7	68.7	32.8	32.8	"	smoke.	" 19.	35.5	44.2	29.5	27.2	Fair.
" 13.	57.6	71.0	31.2	31.0	"	"	" 20.	37.8	45.8	28.0	27.2	"
" 14.	61.7	67.1	37.2	37.5	"	"	" 21.	41.0	49.6	31.5	31.0	Fair, lt. rain & snow.
" 15.	61.7	63.8	40.6	40.8	"	"	" 22.	44.5	32.8	31.5	30.8	Cloudy, snow.
" 16.	59.7	63.1	42.7	42.8	"	sq'ly wd	" 23.	30.8	31.8	27.5	26.8	Cloudy, lt snow
" 17.	57.6	65.7	49.5	49.2	"	prfct day	" 24.	28.8	34.2	19.0	18.8	Fair.
" 18.	62.4	68.7	29.5	29.0	"	"	" 25.	29.8	40.0	22.8	22.8	"
" 19.	64.4	67.7	30.8	30.8	"	rn, slight smoke.	" 26.	40.2	44.1	35.8	37.5	"
" 20.	63.2	55.2	42.8	43.2	Cloudy,	t'der, light, rain.	" 27.	43.5	42.5	39.0	34.8	Fair, snow flurries.
" 21.	53.6	57.9	42.0	42.2	Cloudy,	rain, lightning.	" 28.	34.8	42.1	28.0	27.8	Fair, perfect day.
" 22.	55.6	53.9	41.8	41.1	Fair,	rain.	" 29.	35.5	41.8	25.2	25.0	Fair.
" 23.	49.6	51.2	37.5	37.0	"	"	" 30.	39.5	47.5	33.5	33.0	"
" 24.	47.5	52.9	29.0	28.5	"	"	" 31.	42.8	39.8	33.5	32.8	Fair, snow flurries.
" 25.	49.6	61.0	43.8	43.8	"	sq'ly wd.	Nov. 1.	34.8	41.8	32.5	31.8	Fair, very squally wind, lt. snow.
" 26.	56.9	65.7	33.0	32.8	"	prfct day	" 2.	39.8	35.8	28.5	28.0	Fair, snow flurries.
" 27.	61.7	51.1	44.2	43.0	Cloudy,	rain.	" 3.	32.5	36.1	27.5	26.1	"
" 28.	42.8	40.8	31.5	31.2	Fr, snw	flurries	" 4.	30.8	35.5	28.5	27.8	"
" 29.	39.5	44.2	29.8	29.8	Fair,	snow.	" 5.	33.5	34.3	28.2	27.1	"
" 30.	35.2	40.8	25.0	24.8	"	"	" 6.	31.8	31.5	27.5	23.8	Cloudy, snow.
Oct. 1.	37.5	32.5	27.5	27.0	Fr, snw	flurries	" 7.	24.8	24.8	20.6	18.5	Cloudy, lt snow 1st sleighing, 5 in. of snow on ground.
" 2.	30.5	33.2	25.0	24.5	Cloudy.		" 8.	18.8	21.2	4.8	2.8	Fair.
" 3.	29.5	33.8	24.5	24.0	Fair.							
" 4.	30.0	39.2	16.5	16.1	"							
" 5.	35.0	42.8	16.5	15.8	Fair.							
" 6.	38.8	44.0	19.8	19.0	"							
" 7.	38.8	47.8	20.8	20.2	"							
" 8.	43.0	48.9	23.5	22.0	Fair,	perfect day.						
" 9.	46.5	49.3	33.8	33.0	Fair,	rain.						
" 10.	39.5	44.6	29.8	29.0	Fair,	snow flurries.						

NORMAN B. SANSON,  
*Observer.*

Department of the Interior.

PART VI

DOMINION LANDS SURVEYS





# Department of the Interior.

## SURVEYS.

DEPARTMENT OF THE INTERIOR,  
TOPOGRAPHICAL SURVEYS BRANCH,  
OTTAWA, 1st March, 1899.

JAMES A. SMART, Esq.,  
Deputy Minister of the Interior,  
Ottawa.

SIR,—I have the honour to submit the following report on the operations of the Topographical Surveys Branch during last year. The surveys have again been on a more extensive scale than formerly, no less than twenty-three survey parties being employed. Most of these parties were engaged upon township subdivision surveys: three were surveying town sites, lots and mining claims in the Yukon Territory, two were exploring in the same territory and one was employed on irrigation work.

### MANITOBA.

Mr. J. L. Coté, D. L. S., had charge of surveys in the eastern part of Manitoba. He and his assistant, Mr. R. Bourne, D. L. S., commenced operations at Whitemouth, where a re-survey of the village lots became necessary owing to the unsatisfactory nature of the original survey. He surveyed the outlines of townships 9, 10, 11 and 12, range 12, and subdivided townships 10 and 11. It was intended that he should subdivide township 12, but in surveying the outlines it was found that there was very little land suitable for farming purposes, the greater part of the township being muskeg; it was, therefore, considered unnecessary to subdivide it. He then went to township 5, range 10, and produced the second base line easterly to the international boundary, preparatory to subdividing township 5, range 17. Owing to a report that some Minnesota Scandinavians and others were thinking of settling in the country between the head of the Roseau river and Whitemouth lake, Mr. Coté next proceeded to examine the lands in this locality with a view to subdividing them next season if found suitable for settlement.

Mr. Coté has not yet closed his field operations, he has consequently been unable to prepare his report.

Mr. Henry Lawe, D.L.S., was engaged on the re-survey of section lines in a few townships near the town of Gimli on the south-west side of Lake Winnipeg. The marks of the original surveys had become scarcely visible, and it was necessary in order to properly locate settlers upon their sections that the marks should be re-established.

Mr. Lawe also made a re-survey of the town site of Gimli. The residents complained that few of the posts of the original survey remained and they asked that they be renewed. Mr. Lawe found that the marks, with very few exceptions, had become obliterated. He opened, through the woods, all the streets and some of the avenues, renewed the marks of the old survey and subdivided into lots the greater part of range 7.

Mr. J. E. Woods, D.L.S., left Ottawa on the 21st of May, and closed his operations on the 21st of January following. He and his assistant, Mr. F. Vincent, D.L.S., were located near the narrows of Lake Manitoba.

The first work consisted of the renewal of the marks of the original survey in township 22, range 14, west of the principal meridian. Where the lines of the original survey passed through bush they had become completely overgrown, and in other parts of the township the marks had entirely disappeared. In many cases Mr. Woods was able to find the remains of the old marks, and could determine from them where the original posts stood, but had this township remained a few years longer

without being reposted, all trace of the old marks would have been destroyed, because of the numerous fires which occur. At the time the original survey was made this township was covered with large poplar and spruce, but periodic fires since then have made extensive openings, which are covered with brule and windfall, or willow and poplar scrub.

Three settlers have taken up land in this township and are improving it, but as they could not find any marks to enable them to locate their sections, they were unable to make the proper entries at the land office. Mr. Woods reports that this township presents many advantages for farming, and it was expected that a large number of homestead entries would be made during the past summer. A few miles to the north is a large settlement, through which there is a good trail to Ste. Rose du Lac, nine miles distant, with a post office, two stores and a church. Laurier station, on the line of the Lake Manitoba Railway, is about six miles to the west. The settlers in this locality intend cutting a winter road to the railway, and by degrees so improve it as to make a summer road. There is a steam saw-mill on section 11, at which spruce from the north and east sides of Beaverdam lake is cut into building lumber.

Mr. Woods completed the re-posting of the above township and left for Dog lake, on the east side of Lake Manitoba, where he subdivided several townships. He set out on the Ste. Rose du Lac trail intending to cross the narrows of Lake Manitoba in order to reach Dog lake. But when he arrived at the Ebb and Flow reservation, he was advised by the Hudson Bay Company's officer not to attempt to make the crossing at the narrows, as, owing to the recent heavy rains, the high water had rendered the roads impassable for loads, and the ferry was disabled. Although only 40 miles from his work, he was compelled to turn south and travel around the southern end of Lake Manitoba, a distance of 180 miles. He forwarded the bulk of his supplies by sail boat to Scotch bay, taking with him only sufficient provisions for the journey. He was thus able to travel with lightly loaded carts over good roads, and as rapidly as circumstances would permit.

Dog lake is 12 miles long from north to south, and about as many miles wide. It is dotted with low, marshy islands, fringed with elm, oak and willows. During the summer months, these islands are the abode of immense flocks of duck, gulls and wild geese. Pelicans frequent one small, rocky island on which they hatch; when the young are about able to fly, the Indians surround the island and slaughter them with clubs for the oil, which they get in large quantities and use for cooking purposes. The water of the lake is of a greenish tint and hard, but pleasant to taste. It is well stocked with pike and pickerel. The lake is subject to periodic rises and falls of about three feet, but Mr. Woods thinks that by excavating about 20 chains along Dog creek, which drains the lake into Lake Manitoba, the recurrence of high water would be prevented, and large tracts of flooded hay land could be reclaimed. The country surrounding Dog lake is undulating and marshy, and the soil is generally a clay loam. Horizontal beds of limestone crop up at the surface in places. They could be easily quarried for building purposes and for the manufacture of lime.

Mr. Woods thinks the drawbacks to settlement in this part of the country, as well as around the narrows, are the great distance from railway communication, and the bad condition of the roads, and also the liability of the hay lands to floods. As there appears to be no prospect of a railway being built along the east side of Lake Manitoba, colonization might be facilitated by a steamer making weekly trips between Westbourne and Fairford, and calling at different points along the lake, from which roads could be made into the interior. By this means a large number of settlers might be induced to take up land in this district, and many who abandoned their places a few years ago would no doubt return, especially in view of the proposed lowering of Lake Manitoba by a supplementary outlet at Fairford. The principal articles of export would be pressed hay, fresh fish and cattle, and within a few years there would doubtless be a large amount of grain for export.

Mr. James Dickson, D.L.S., started for Dauphin lake on the 30th of May, and after completing the subdivision of several townships on the east side of the lake, he left Dauphin on the 1st of November.

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He commenced operations in township 26, range 15, and having completed the subdivision, he moved into township 27, range 16. This township was at one time covered with large timber, which has been completely destroyed by fires, and is now a mass of logs and brush with a dense new growth springing up. Mr. Dickson surveyed the north and south boundaries of the township, but found the land so inferior that upon a further examination in the interior, he decided to abandon the work of subdivision, as the land is not suitable for either ranching or agriculture.

He next proceeded to subdivide townships 27, 28 and 29, range 17, but before completing township 29 he was compelled to close operations for the season. By this time the sloughs were all frozen over, though the ice was not sufficiently strong to carry, and his horses could seldom get any food except browse in the woods. The country generally is very low and wet. The sloughs last season were full of water and nearly all alkaline.

Mr. A. F. Martin, D.L.S., with Mr. L. Gosselin, D.L.S., as assistant, was employed to the west and north of Dauphin lake. He left Ottawa on the 16th of May, and had not closed field operations up to the 2nd January last, date of his report of the season's work.

Mr. Martin commenced his survey by subdividing parts of townships 29 and 30, range 18. He considers these townships only fit for ranching purposes, as the land consists of large hay swamps and numerous muskegs. Along the lake are some excellent hay lands.

On the 3rd of August he moved into township 29, range 19, the larger portion of which he subdivided. Fork river, a well-defined stream with high banks, traverses this township; about a mile on each side of the river the soil is very good. Several farmers have settled here, and all express themselves as highly satisfied. Fishing river runs through the southern portion of the township. A few settlers, some of them Galicians, are located on its banks. They are clearing up the land, have good buildings, and are doing well. The land in general throughout the township is scrubby, but between the two rivers it is well wooded with poplar. A station of the Lake Manitoba Railway and Canal Company's line is in section 26.

Mr. Martin renewed the corners in township 26, range 19, the marks of the original survey having been destroyed by fire. The country to the south of the Valley river is comparatively open; to the north of the river it is scrubby and well wooded with poplar. Mr. Martin was informed that there is not a vacant quarter section for homestead entry in this township. The fine wheat fields and comfortable dwellings seen on every hand convey the impression that the lands have been settled upon a number of years; yet ten years ago scarcely any cultivation was carried on.

In the beginning of October Mr. Martin proceeded to subdivide township 23, range 19. This work was much retarded owing to the lack of proper food for the horses and to heavy rains and snow throughout the whole month. Swamps and muskegs were converted into lakes and the streams were overflowing. Under these circumstances satisfactory progress could not be made with the survey until frost set in, and as the weather continued mild Mr. Martin decided, after surveying twenty-seven miles, to move to townships 24 and 25, range 25, where the conditions for surveying were more favourable. These townships are situated in the gap between the Riding and Duck mountains and form the extreme west end of what is known as the Gilbert plains. The land is high and well drained by numerous streams, and the soil is of remarkably good quality. There is an abundance of timber and great quantities of hay and good water.

After completing the survey of parts of these townships, Mr. Martin returned on the 29th December to township 23, range 18. He saw six settlers in township 25, range 24, some of whom have been residing there for the past seven years and are comfortably settled. They state that that portion of the country is free from frost.

Mr. Martin suggests that it would be advisable to complete the subdivision of township 24, range 25, as early as possible, and also townships 23, range 25, and 26, range 24.

Mr. P. R. A. Belanger, D.L.S., had as his assistant, Mr. C. A. Bourget, D.L.S., and was employed at the subdivision of townships and the survey of outlines east of

Duck mountain in the Swan river district. On the 9th of June, he commenced work on the 10th base line, at the north east corner of township 36, range 25, west of the principal meridian. During the season he surveyed the 9th base line across ranges 20, 21 and 22, the 10th base across ranges 22, 23 and 24 and the east outlines of townships 30 to 36 in ranges 22 and 23. On all these lines Mr. Belanger reports little land suitable for agricultural purposes, the country generally is low and broken with swamps and floating bogs. In addition to the above outlines Mr. Belanger subdivided township 36, range 24, and part of township 36, range 25 and township 35, range 26, in the vicinity of the Favel river. The line of the Lake Manitoba Railway and Canal Company, now known as the Canadian Northern Railway, traverses the two former townships. During the past season this railway was extended a distance of 54 miles from Sifton to Cowan, a station on the North Duck river to which weekly trains were running with regularity last fall. It is the company's intention to still further prosecute the construction in the spring, and for that purpose rails and other supplies have been delivered on the ground. As a result of the construction of this railway, settlement in the Swan river valley has made very rapid progress, so rapid indeed that nearly all the land surveyed in that locality during the season of 1897, has been taken up. At the time of Mr. Belanger's departure from the settlement at Favel river, there were, besides the land office, three general stores, three stopping places and a population of about 250. Mr. Belanger's survey covered a large area of bush land, yet the only timber suitable for lumbering purposes is in the foothills of the Duck mountain, where good spruce may be obtained in paying quantities. Mr. Belanger draws attention to the fact that within recent years thousands of acres of fine large spruce throughout the Duck mountain have been destroyed by fire. The damage done to these forests through the careless handling of fires is a subject worthy of serious consideration, and it may be expedient that some measures should be taken to prevent, if possible, any further loss.

Mr. E. W. Hubbell, D.L.S., started for the Swan river district towards the latter part of May, and closed his operations on the 9th of December.

He was engaged the greater portion of the season surveying base lines and meridian exteriors, north of the ninth base line, in the Duck mountains and Porcupine hills. He commenced work at the north-east corner of township 32, range 28, west of the principal meridian. On the northern slope of the mountains in this vicinity there is a quantity of good timber, which has not been injured by fire. The soil varies from a few inches of black loam to sand and gravel. Mr. Hubbell reports heavy frost on the 13th June, but from that date until the 8th July, the heat was intense. He next surveyed the meridian between ranges 30 and 31, north, from the ninth base line. This line traverses a fine stretch of undulating country from the foot of Duck mountains. About eight miles north of the base line the Swan river is crossed: to the south of the river there are some excellent hay lands. Since the date of the survey several settlers have located in this vicinity. The meridian between ranges 31 and 32 is through a fine agricultural country, the soil is first class, and nearly all open prairie. Mr. Hubbell thinks that this portion of the country promises to be settled before long. The trail from Pelly to Swan lake crosses the Swan river, about half a mile to the east of the meridian; in the spring of the year especially this is a very dangerous and difficult crossing. It is necessary that a bridge should be erected here: no doubt this is a matter the local government will attend to at no distant date.

Mr. Hubbell finished a portion of the subdivision of township 35, range 29, which was not completed the previous season. A year ago there was not a squatter within fifty miles of this locality, but settlement has taken place with such astonishing rapidity that apparently there is not a vacant section for homestead in this township. He surveyed the tenth base line across range 30, and the meridian between ranges 30 and 31, and then subdivided the southern portion of township 36, range 29. The south branch of the Woody river flows easterly through this township. Along its valley is a tract of excellent hay, which would furnish food for a large number of cattle. Mr. Hubbell completed the subdivision of the unfinished portions of last season's survey in townships 35 and 36, range 28. In both of these townships there are some settlers. The latter is especially a most desirable one for intending settlers, in fact a considerable amount of ploughing has already been done and some houses built. The soil is first-class, and

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there is an abundance of good building timber along the Swan river and the numerous creeks. In the valleys of the creeks there is a large quantity of hay; from 200 to 300 tons were cut and stacked last season. From these townships Mr. Hubbell proceeded to complete the subdivision of township 36, range 26. The greater part of the township is settled and some very fine grain is produced. The temporary land office for this district is located in section 11, close to the Favel river. Mr. Hubbell was informed that there was a great rush to it for land entries. The immediate erection of a saw-mill in section 30 is contemplated. Mr. Hubbell next subdivided a portion of township 37, range 27; it is nearly all occupied by settlers. The location of the extension of the Dauphin railway is northerly across the centre of the township.

This portion of the country abounds with moose, bear, wolf, fox and other fur-bearing animals.

Mr. J. C. Desmeules, D.L.S., and his assistant, Mr. J. A. Belleau, D.L.S., were employed in subdividing township 34, ranges 28, 29 and 30, in the Swan river district. They left Ottawa on the 8th June and completed the survey on the 27th of October. Mr. Desmeules commenced operations at the north-east corner of township 34, range 28. He reports these townships well adapted for either mixed farming or grazing purposes. The soil for the most part is a good quality of clay and a black sandy loam; there is an abundance of wood and plenty of good water. Apart from the numerous small streams and ponds which water these townships, they are traversed by the Swan and Roaring rivers and Bearshead creek. A very small proportion of the original forest has escaped the many fires which have swept through this section, but a new growth of poplars, &c., now covers the ground where it is not open prairie.

In view of the fact that there is likely to be a large influx of settlers to this locality next spring, Mr. Desmeules thinks it desirable that the main trails, both north and south of the Swan river, should be improved. He also draws attention to the great necessity for a bridge over the Swan river on the trail from Pelly. This matter is alluded to by Mr. Hubbell, but Mr. Desmeules points out that it is always a difficult and even dangerous task to make this crossing, particularly with loaded waggons or carts. These are matters which the local government will no doubt think it advisable to attend to.

The only work done under contract last season was performed by Mr. W. A. Ducker, D.L.S., who completed the subdivision of township 22, range 26, west of the principal meridian. The south-western portion of the township was subdivided a number of years ago, and the Manitoba government was anxious to have the remainder of the township surveyed, in order that the land warrants of the Manitoba and North-Western Railway Company, located on the odd-numbered sections, could become effective in favour of the government, who held the warrants. A large amount of excellent timber was being cut on these sections and the Manitoba government was desirous to obtain possession in order to prevent the loss of this timber.

### NORTH-WEST TERRITORIES.

Mr. C. F. Aylsworth, D.L.S., was employed renewing survey marks near Yorkton. He travelled over the trail between Yorkton and Pelly as far as Whitesand river in township 30, range 1, west of the 2nd meridian, where he commenced operations. This is a very desirable township for settlement; the soil is generally a good sandy loam, and there is an abundance of timber for building purposes, fencing, &c. It has the advantage of being on the trail between Yorkton and Pelly, which is said to be an exceedingly good one. Mr. Aylsworth describes Yorkton as a commercial centre of considerable importance. The chief business is in cattle, large numbers of which are driven here from the surrounding country for shipment. The town has a number of general stores, hotels, good schools, churches, &c. The farmers surrounding Yorkton are principally engaged in stock raising, but, by degrees they are attempting mixed farming, their efforts in this respect being attended with considerable success. Mr. Aylsworth met a number of Galician families along what are known as the "Sliding hills." He says they are very industrious and doing as well as can be expected with the scanty means

at their disposal. On the 14th of July he moved into township 27, range 32, west of the principal meridian, and renewed the corners. He reports this township as being exceptionally favourable for ranching; there is a good supply of water in Stony creek and the spring creeks tributary thereto, as well as large quantities of hay. A number of ranchers are located in here; they have fine herds of cattle and some bands of horses. One settler has about one hundred bronchos. Owing to the success of the cattle trade during the past season, ranchers have been tempted to very materially increase the size of their herds. The demand for cattle was so great that one rancher states he was enabled to dispose of one hundred head at an average price of \$43 per head.

A very good road has been constructed from the north-east corner of section 10, northerly, to Kamsack post office; it is the intention to eventually grade this road southerly to Saltcoats. Mr. Aylsworth also renewed the corner marks in townships 26 and 27, range 31, and township 26, range 32. There is a steam saw-mill on section 25, township 27, which was in operation during the winter of 1897-98, but Mr. Aylsworth states that owing to a dispute among the promoters it has ceased operations. Mr. Aylsworth closed field operations on the 7th of November.

Mr. A. J. Brabazon, D.L.S., and his assistant, Mr. F. X. Fafard, D.L.S., were engaged renewing the marks of surveys and making re-surveys of townships near Yorkton, Assiniboia.

Having completed these surveys, Mr. Brabazon returned to Ottawa at the end of November. On the 17th of January he was instructed to make surveys for locating the Doukhobors in the Kamsack colony, and he had to return to the field before a report of his operations for the past season could be prepared.

Mr. J. Lestock Reid, D.L.S., had charge of the surveys in the Prince Albert district. The work was of a miscellaneous character. He commenced near Batoche by renewing the survey marks of the St. Laurent settlement, and of townships 42, 43 and 44, range 1, west of the 3rd meridian. The marks of the original surveys were with few exceptions completely obliterated, and it was necessary in nearly every instance to retrace the lines. These townships are adjacent to the south branch of the Saskatchewan river, within ten miles of the railway station at Duck lake, and are very desirable for farming purposes. Mr. Reid states that the country for a considerable distance to the east of St. Laurent is particularly well adapted for settlement, especially the Hoodoo locality and Birch hills. He next proceeded to the 12th base line, and produced it easterly from range 14 to range 11, west of the 2nd meridian. This portion of the country, if cleared of the forest, would very much resemble the Melfort creek district. The country from range 11 westerly to the south branch of the Saskatchewan river, and more particularly along Doghide river, Leather river, Melfort creek and Carrot river is remarkably good, and not excelled, in Mr. Reid's opinion, by any in the North-West.

Mr. B. J. Saunders, D.L.S., was employed at various surveys scattered throughout southern Alberta. He was instructed to commence by re-marking the corners of blocks in the southern portion of the townsite of Macleod. These corners, originally marked with wooden posts, had nearly all been destroyed. It was, therefore, necessary to remark them with iron posts. After completing the work at Macleod, he proceeded to the St. Mary river, where he subdivided some townships adjoining the Blood Indian reserve. The headquarters of the Brown Rancho Company are in township 4, range 24, and the main trail and telephone line between Lethbridge and Cardston traverse the south-eastern portion. Mr. Saunders then moved to the Milk river ridge, where he subdivided township 2, range 21. The north branch of the Milk river crosses the southern portion of this township. There are tracts of good "bottom lands" along the river, which could be easily irrigated and rendered productive, but, generally speaking, the soil is better adapted for grazing than anything else. Good building stone is to be obtained at a number of points along the river.

Mr. Saunders left for Cardston on the 23rd August, and from there proceeded by the Mountain View trail to Belly river, where he was engaged for a time making a traverse of a portion of the river. He thinks a promising future is in store for those who have settled in the section of country between Cardston and Belly river. Great fields of ripening grain were to be seen on all sides, as an evidence of the wonderful development which has taken place in this locality within a short time. After surveying

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a few lines in two of the townships near Waterton lakes, Mr. Saunders left for Pincer creek, and completed the subdivision of the lands fit for settlement in township 9, range 2, west of the 5th meridian. Portions of this township are very hilly, and he suggests that reservations for trail purposes should be made from some of the lands before patents are granted, as in some cases it will be impossible to utilize the road allowances for highways. Mr. Saunders next subdivided a portion of township 10, range 2, and traversed part of Oldman river. The headquarters of the Walrond Ranche Company are on section 12. From here Mr. Saunders went to Stimson creek, and surveyed some lines in township 16, range 2 and townships 16 and 17, range 3, for the purpose of locating a number of settlers. A large amount of fencing has been done in these townships by the ranchers and settlers, in order to facilitate the herding of cattle. The headquarters of the North-West Cattle Company are located at Pekisko. Mr. Saunders next proceeded to Banff and marked the corners of the blocks with iron posts; they were marked about ten years ago with wooden posts. After completing other minor surveys in the Rocky Mountains Park, he closed operations on the 28th of November.

Mr. A. C. Talbot, D.L.S., was employed in the northern part of Alberta, and had as assistant, Mr. L. E. Fontaine, D.L.S. He left Ottawa on the 25th of May and closed operations on the 12th of December. From Edmonton he followed the Hay lakes and Duhamel trail to Meeting creek, where he commenced the eastern portion of his season's work by subdividing township 42, range 16, township 40, range 17 and townships 41 and 42, range 18. The soil in these townships is, generally speaking, good for farming purposes. There are some bluffs of poplar and spruce, but a considerable quantity of timber which would have been suitable for settlers has been destroyed by fire. A number of creeks traverse these townships; but there was no running water in them at the time of the survey. Mr. Talbot next proceeded to the north-east of Pigeon lake, where he subdivided township 48, ranges 26, 27 and 28, and part of township 47, range 26. The soil is generally of fair quality; there are some bluffs of poplar and spruce, but frequent fires have destroyed a large quantity of good timber. A considerable amount of hay was cut last summer. Mr. Talbot says that quite a number of settlers located in the district near Pigeon lake last fall, no less than thirty having settled in township 48, range 26. He was informed of a seam of good soft coal on Conjuring creek, in section 12, township 48, range 27, but saw nothing of it as the snow was on the ground at the time he prospected the creek.

Mr. J. K. McLean, D.L.S., was engaged subdividing townships and surveying outlines in the vicinity of Lake Ste. Anne, northern Alberta. He commenced operations at the north boundary of township 55, range 1, west of the 5th meridian. After completing the outlines he subdivided townships 55, ranges 1 and 2, and townships 54, ranges 2 and 3. The area of land suitable for the production of grain is limited. Mr. McLean reports that the last season's grain was of inferior quality, owing in part to the extreme drought in that locality. A few settlers are scattered throughout these townships, and a considerable settlement of Half-breeds exists at Lake Ste. Anne, but beyond raising a few potatoes, some cattle and horses, not much attempt is made at farming. These people depend to a large extent upon the white fish in Lake St. Anne for a living. Here, again, a large quantity of valuable timber has been destroyed by fires, due in a great measure to carelessness in burning off the hay marshes. Mr. McLean reports some of the settlers quite indifferent as to the destruction of this timber. Coal is obtained on the Sturgeon river in section 9, township 55, range 2; it is used by some of the settlers, who speak very highly of its heating power.

Mr. C. C. DuBerger, D.L.S., was in charge of a survey east of Edmonton, northern Alberta. He left for Edmonton on the 30th of May, and closed operations on the 9th of November. His work consisted of outline surveys and subdivision in the Beaver hills. Township 52, range 19, is a succession of hills, marshes and lakes. The land would be somewhat difficult to cultivate, but, if cleared of the timber already destroyed by fires, it would be suitable for pasturage. Throughout the remainder of the townships subdivided, there are good agricultural lands and all the timber necessary for fuel, fencing and building can be obtained. Large quantities of hay are to be had along the shores of Cooking lake.



## BRITISH COLUMBIA.

Mr. J. E. Ross, D. L. S., was again in charge of surveys in the railway belt, British Columbia. He left New Westminster on the 31st of May to commence the season's operations, and finished on the 29th of December. His first work was a partial subdivision of townships 19, 22 and 25 east of the coast meridian. The portion surveyed comprises a strip about a mile and a half wide from the Soo-wah-lie Indian reserve to the international boundary line. Mr. Ross met on these lands some settlers who are very well pleased with their locations. On his way to Sumass Mountain, he traversed part of Cheam lake and surveyed a few sections between the lake and Cheam mountain. At Sumass mountain he subdivided parts of townships 19 and 20, New Westminster district. There is a good road through the surveyed lands to the steamboat landing on the Fraser river, along which are some settlers and suitable land for more. From Sumass mountain he proceeded to Spence's bridge, where he made a traverse of the Thompson river in township 17, ranges 24 and 25, west of the 6th meridian. The section lines were surveyed some years ago, but a traverse of the river was necessary to obtain the areas of fractional sections along the river. Since making this traverse a land slide has taken place which may affect the areas considerably. Mr. Ross next proceeded to a point about ten miles south-east of Savona, from where he made a survey southerly to the south limit of the railway belt. On the south side of the divide between the waters flowing into the Thompson and Nicola rivers, the country is specially adapted for stock raising. It is doubtful if general farming can be successfully conducted as the land is high and situated in a dry locality, but the extent of the grazing lands seems almost unlimited. This is a favourable resort for sportsmen. Deer were not very plentiful at the time of the survey, but the small lakes were teeming with ducks and geese. After finishing the above survey Mr. Ross proceeded to a point about fifteen miles south-east of Kamloops, and subdivided parts of townships 17 and 18, range 16, where applications to purchase lands have been made.

## BOUNDARY SURVEYS.

In my last annual report, it was explained that the boundary line between the provinces of Ontario and Manitoba had been surveyed by a joint commission consisting of Mr. Elihu Stewart, D.L.S., representing the Dominion and Mr. Bryce J. Saunders, O.L.S., representing Ontario. The report of the commissioners has since been received and is submitted herewith. The survey was executed with the greatest care and accuracy; the marks on the ground are numerous and substantial and the records of the operations are elaborate. Under such conditions, it is almost impossible that any difficulty should arise in the future in connection with this boundary.

## IRRIGATION SURVEYS.

During the winter it was arranged that the work connected with the administration of the North-West Irrigation Act, which had previously been carried on through the office at Calgary, in charge of Mr. J. S. Dennis, and the officers of the several Dominion land agencies, be centralized at Regina as part of the Territorial Department of Public Works, acting as agents of the Department of the Interior in carrying out the administration of the Act, and the surveys connected therewith.

Mr. A. O. Wheeler, D.L.S., was placed in charge of the topographical surveys, and on 1st June, took over the office at Calgary and proceeded to organize the field parties for the season, under instructions from Mr. J. S. Dennis, Deputy Commissioner of Public Works for the North-West Territories.

Three survey parties were placed in the field. No. 1, under the personal supervision of Mr. Wheeler continued the photo-topographical survey of the Alberta watershed southward from Highwood river.

The measurement of the base selected the year previous was completed, and the triangulation extended over the section covered by the photographic survey.

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Dense smoke from bush fires in British Columbia, lasting from early in July until the end of September proved a serious hindrance to photographic operations.

Party No. 2 was in charge of Mr. R. W. Macintyre. His work comprised a topographical survey of the more level portion of the arid district where irrigation is, or may be in force.

It is desired to obtain a contour map of this section, on which can be shown with accuracy the irrigable areas and their relation to sources of water supply.

The party was in the field from the 16th of June, until the 7th of October, and covered an area of 776 square miles.

Surveys were also made at High River village to divert the Highwood river from a channel where it was seriously encroaching upon the village; and further to divert 50 cubic feet of water per second to the Little Bow River, thus insuring a constant flow in that stream.

Mr. J. T Child was in charge of party No. 3. He made a preliminary topographical inspection in eastern Assiniboia, with a view to locating the most suitable points for storage of the spring and freshet discharges of the streams and coulees situated within the field of his operations, to increase the present water supply for domestic and stock watering purposes.

Surveys were first made to locate a dam on the Qu'Appelle river at Katepwe as a substitute for two dams previously existing, but out of repair, with the object of raising the water in the Fishing lakes. The dam is now under construction by the North-West Territories government.

It was ascertained that some springs in the Squirrel hills, seven and a half miles south of Indian Head, could be utilized to supply that town with water. The flow was found by measurement to yield 30,730 gallons per 24 hours. Suitable reservoirs were selected in which to store it. Two reservoir sites were located on Redfox creek; one on the main road between Grenfell and Wolseley that would be useful for watering stock passing along the highway to market; one suitable for supplying the Oakshela district with water; and another in section 4, township 18, range 8, that would be of great service to the settlers thickly scattered around, some of whom had to draw water a distance of 8 or 9 miles.

A ditch was laid out and a dam located to enable the waters of Pipestone lake to be conducted by way of Summerberry creek, to the Grenfell district.

It was also found that it would be an easy matter to replenish the water supply in Escape lake from Pipestone creek.

Finally surveys were made with a view to diverting water from a tributary of Cussed creek to replenish the dry lake beds in the vicinity of Yorkton.

The party was in the field from the 9th of June to the 15th of September.

In connection with hydrographic records, three nilometers were in operation; one on the Bow, one on the Elbow, and one on Highwood river.

Twenty-one gauge rods were distributed on the rivers and streams in various parts of Alberta and Assiniboia, chiefly along the lines of the Canadian Pacific and Calgary and Edmonton railways. The records were kept in a majority of cases by sergeants of the North-west Mounted Police force and section foremen along the railway.

Two evaporation pans and gauges were established, and records obtained.

A number of ditch inspections were made with a view to the issue of licenses for water rights.

Detailed reports from Mr. Wheeler and the gentlemen in charge of survey parties Nos. 2 and 3 are submitted herewith.

### YUKON TERRITORY.

On the 19th of April, 1898, Messrs. Cadenhead, Gibbon and Cautley, D.L.S., with a party of men proceeded to Dominion creek, one of the largest tributaries of Indian river. Messrs. Cautley and Gibbon made a survey of all the creek claims from nine above upper discovery to one hundred and twenty below lower discovery, and, simultaneously, Mr. Cadenhead was occupied in taking evidence with regard to the legality of

some of the staking. They returned to Dawson on the 31st of May. The creek has two recognized discovery claims, and as a consequence there was a lack of sequence in the claim numbers, which was the cause of a good deal of confusion. There are three distinct changes in the character of the creek. Near its head, its bed is narrow, well defined, and enclosed on each side by the mountains. Somewhat farther down, the creek runs through a succession of low flats, which vary in width from 60 to 160 feet: these are bounded by benches rising gradually to the foot of the mountains. The valley at the lower end of the creek, as far down as it was surveyed, is in some cases as much as 1,500 feet wide, and the creek generally is on the southerly side. During winter the water runs over the ice and freezes, so that the flats from bank to bank become filled with ice and glaciers are formed eight and nine feet deep at places. On the 1st of June a considerable amount of this heavy ice was still lodged in the bed of the creek, although on the 2nd of May it was generally free of ice. The current is at the rate of about three miles an hour, but as it is an extremely crooked stream, it affords excellent opportunities for miners to divert water at almost any point. Spruce of rather inferior quality may be obtained on the neighbouring hillsides. The benches are covered with muskeg and "nigger-heads," which effectually prevent the frost from ever leaving the ground beyond a foot or two. During the past summer the hillside claims on each side of the creek were taken up and some of them are apparently turning out very well.

Messrs. Cautley, Cadenhead and Gibbon, especially the two former, were engaged for a considerable portion of the summer in the Gold Commissioner's office assisting Mr. Fawcett with the immense amount of business transacted there. Mr. Cautley was recording bench claims on Dominion creek and preparing returns of the survey. Mr. Cadenhead was receiving applications for quartz claims.

On the 14th of September Mr. Cautley proceeded to Selkirk to survey a portion of the townsite. This was urgently needed as the inhabitants were building in an irregular manner. The townsite is located on the left bank of the Yukon river, about one mile below the junction of the Lewis and Pelly rivers, and is well situated on a high gravel bench, which rises gradually to the foot of a low range of hills about three quarters of a mile back from the bank of the river.

On the 4th of October, Mr. Cautley held an auction sale under instructions from Commissioner Ogilvie, and disposed of a considerable number of lots in the townsite. He returned to Dawson on the 8th of October.

In September Mr. Cadenhead was engaged surveying the placer claims on Sulphur creek. He went by Indian river and was instructed to make a micrometer survey of the river to the mouth of Sulphur creek.

In the latter part of the same month Mr. Gibbon commenced a survey of town lots at a point opposite the lower end of Dawson, called West Dawson. Previous to this he had been working for some weeks surveying the hill and bench claims on Eldorado.

On the 13th of April, 1898, Mr. J. J. McArthur, D. L. S., was instructed to explore the district drained by the Stewart and MacMillan Rivers.

He proceeded by the Dalton trail from Pyramid Harbour to Five Fingers rapid. From Hutshi village the trail follows the Nordenskiöld river to the Yukon, and the country presents no difficulties to the building of a waggon road or railroad.

He swam his horses across the river below Five Fingers and followed the stream down to the mouth of the Pelly.

A base was measured on the Selkirk flat and a triangulation extended north to the Stewart river. The distance across, in a straight line, is about 53 miles. For a long distance he followed the height of land between the Pelly and Stewart rivers. The highest point on his trail is 4,150 feet above sea and the highest mountain 5,467 feet. The altitude at the mouth of Pelly river is about 1,500 feet. Ten miles due north of Selkirk is an extinct volcano. The lava stream flowing to the north-west is visible for many miles. The Indians say that about fifteen years ago smoke issued from the mountain. The crater shows signs of a comparatively recent and mild eruption; when it subsided the lava solidified in the form of a cone.

Mr. McArthur struck the Stewart three miles east of the mouth of McQuesten creek, where a number of prospectors were camped, waiting for something to turn up. A recorder and police escort had just arrived from Dawson. Here the creek is a

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magnificent stream, about one hundred and twenty-five yards in width, deep and with a four mile current. He moved up stream, at the same time extending his triangulation and had no difficulty in keeping his camp up with the work. Numerous fires were raging along the valleys and hill sides and the smoke became denser every day. About the 12th August he had to abandon the triangulation, as he could not afford to wait for the smoke to disappear but he continued along the valley making a track survey, every now and again touching the river at one of its many bends. Nothing was visible because of the smoke except the immediate foreground. Some prospectors seem to have a mania for setting bush fires, and if strict measures are not adopted immediately to prevent this vandalism, the timber on the mountain sides and river flats will be destroyed in a very few years. To those who have faith in the Yukon district as a permanent mining country, the rapid disappearance of the green forest is harrowing, and it will unquestionably in a short time seriously affect the navigability of the rivers.

About the 18th, the atmosphere cleared and the triangulation was resumed with the expectation of being able to fill in the gap on the way back. Feed along the trail was abundant, but the animals did not thrive. Hoof disease and mud fever broke out, and they had to be dropped one by one at places where the pasturage was good with the hope that they would recover, but on the return trip most of them were dead and the rest had to be shot.

On September 4th Mr. McArthur reached the forks. There had been rainy weather for some time and his progress was slow. He had only five horses left out of a band of nineteen. Two stations were occupied to take in the country in the neighbourhood of the forks and he then started back.

A small raft was built and the horses being relieved of their loads were started on the back trail in charge of two men, while Mr. McArthur and the rest of the party continued down stream. At suitable points along the valley he made camera and sketch stations, and by making a few ascents, succeeded in filling in the gap in his triangulation. He occupied 24 triangulation stations and 48 camera and sketch stations. On September 19th he reached the McQuesten, and his two men arrived next day with four horses. There had been quite a rush during the summer to the upper tributaries of the McQuesten. The recorder informed him that two hundred good men were wintering on Haggart, Johnston and Nelson creeks. While Mr. McArthur was at the record office, about a dozen men came in to file their claims and a number paid their fees with gold gleaned from the claims which they were recording. Very promising quartz ledges have been discovered on Johnstone creek. Only four men are wintering above McQuesten on Stewart River. They are on Mayo creek.

It took Mr. McArthur seven days to cross the Selkirk. The snow was deep on the high ridges and he had to relieve the horses of their loads. He managed to get them to Pelly river, but they were not fit to swim and were left where feed was plentiful. The police officer was advised and promised to have them shot when winter set in.

Mr. McArthur boarded the steamer "Ora" at Selkirk, on October 1st; he reached Skagway on the 15th, and Ottawa on November 3rd.

Between the mouth of the Stewart River and McQuesten creek there is one ripple which, however, does not interfere with navigation. From McQuesten to Mayo creek the current is about four miles an hour and the river deep. From Mayo to the falls, the current is barely two miles an hour with good navigation all the way. The Fraser fall is a crooked gorge through which the river rushes. At extreme high water there may be a fall from the table rock on the east side. From the head to the foot, a distance of one-third of a mile, the fall is forty feet. Four miles above, the stream is broken at intervals by short rapids. Above this the river resumes its general character as far as the "Seven Mile Canyon." The stream is deep and of uniform width; its course is rather tortuous, and the current is about four miles an hour. A steamer might possibly warp through the canyon, in which case she could go as far as the mouth of the Beaver and up this stream, which is rather sluggish, for many miles. The north fork above the Beaver is reported to be very swift and about a hundred yards in width.

Mr. McArthur gives the following distances along the river :—

	Miles.
McQuesten creek to Moose creek . . . . .	20
“ “ Crooked creek . . . . .	35
“ “ Mayo creek . . . . .	72·5
“ “ Fraser falls . . . . .	112·5
Fraser falls to No Gold creek . . . . .	6
“ “ South fork . . . . .	55
South fork to Lansing creek (estimated) . . . . .	35
“ “ Seven Mile canyon (estimated) . . . . .	36·5
“ “ Canyon (estimated) . . . . .	7
Seven Mile Canyon to mouth of Beaver river (estimated) . . . . .	45

There are no extensive areas of timber along the Stewart, but there is quite enough for building and mining purposes.

Mr. McArthur's report has not yet been completed.

Mr. A. Saint Cyr, D.L.S., was instructed on the 13th April, 1898, to proceed by way of the Stikine river and the overland trail to Teslin lake, and from that point to make a survey of the Nassolin river, which is the chief eastern feeder of Teslin lake. After this he was to survey the Big Salmon river, which rises close to the Nassolin and is an important tributary of the Lewes river. The object of the exploration was to obtain a general knowledge of the district drained by these rivers and their tributaries.

In order to fully cover the district in the short time at his disposal, he made a triangulation which embraced all the head waters of the Nassolin river and its lower reach as far as Quiet lake.

The triangulation was carried across to the valley of the Big Salmon river, and extended as far as the western edge of the mountains. From the different stations, which in every case were established on the tops of the highest peaks, and perpetuated by stone cairns, he took over one hundred photographs of the country. These photographs are being used for mapping.

The overland route was used this year for the first time to drive cattle and sheep to Teslin lake. The drovers spoken to on the way expressed satisfaction with the country, as it afforded their cattle an abundance of good feed in close proximity to the trail. They felt sure of reaping a rich harvest from the sale of the cattle at Selkirk and Dawson.

The past season having been an exceptionally dry one for that district, the level of the water in Teslin lake was so low that on July 16th, the large islands situated at the mouth of White Swan river, which the previous year, and at a much later period, had been totally submerged, afforded good feeding grounds for the pack animals.

In the delta of the Nassolin river are extensive hay meadows, where in ordinary years hundreds of tons of hay could be cut.

The exploration carried on during the past season establishes beyond a doubt that the principal branch of the Nassolin River flows out of lakes in the extensive plains which connect the basin of this river with that of the Liard river.

After a very circuitous course of forty miles across plains and through the mountains to the west of the plains, the Nassolin river receives, in latitude 61° 11' N., an important tributary from the north. Thus increased in volume it flows for forty miles in a southerly direction. Here the river bifurcates, but two miles and a half further down it re-unites, and for forty-eight miles it follows a S. 25° E. direction. A sharp turn to the right then occurs, and seven miles and a half below the river enters Nassolin bay. An area of 5,000 square miles is drained by this stream and its tributaries.

All the northern tributaries of the river rise in the high range of mountains which divides the valley of the Pelly river from those of the Nassolin and Big Salmon rivers. These mountains attain an altitude of nearly 7,000 feet above the level of the sea, and are covered with snow all the year round.

The country through which the Nassolin river flows was pretty well prospected last year by numerous miners. In the fall some of them returned to Teslin Lake, but the majority crossed over to Quiet lake (the head waters of the Big Salmon river) by

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Cary's Portage, an easy and short route over comparatively level country and a little over four miles in length. A few miners who had sufficient supplies resolved to winter on the Nassolin, and make a systematic examination of the country next year.

Good spruce may be obtained along the banks of the lower Nassolin. The river is navigable for a considerable distance above its mouth, though there are some rapids to overcome nine miles above its confluence with the north branch. In high water the rapids would not be a serious obstacle to the passage of boats as far as the lakes from which the river takes its rise. It may be possible to reach the Liard river by this route.

On September 24th, Mr. St. Cyr began the survey of Quiet lake and its outlet, the Big Salmon river. At the same time he extended his triangulation by establishing stations on the tops of the most prominent peaks rising on either side of the valley.

The tributaries of the upper part of Big Salmon river are numerous, but unimportant, till the south branch is reached. This branch lies in a very wide and timbered valley and joins the main river fifty miles above its junction with the Lewes river. It rises in the same district as Boswell river, an easterly tributary of the Teslin river. Last fall some miners discovered coarse gold near the sources of this stream, but the season was too far advanced to permit of much prospecting.

Twenty miles below the south branch, the Big Salmon river receives another large tributary from the north, which at high water must contribute fully one-third of the volume of the main river.

There are two rapids on Big Salmon river near its confluence with the north branch. Close to the first one, which is just above the junction of the stream, the Indians have established a salmon fishery. The other rapid is in a bend of the river, a short distance below the mouth of the north branch. Quiet lake is twenty miles long by one mile wide, and north-west of it are two other smaller lakes connected by short sections of river.

From the foot of the last lake, the river, which is shallow and very tortuous, takes a general north-west direction for a distance of 60 miles measured along its sinuosities. Here an imposing range of mountains has caused the river to deflect its course towards the south-west a further distance of 23 miles, after which another sharp turn to the right occurs and the river resumes its original north-westerly course, which it maintains with slight variation up to its confluence with the Lewes river.

Two-thirds of the upper section of the Big Salmon river run through an exceedingly mountainous country, a continuation of that drained by the most northern affluents of the Nassolin river.

Beyond the south branch, the plains are dotted alternately with lakes and groups of hills, the latter being generally timbered to the top, and thrown up without any well-defined order. Such is the general character of the country in the vicinity of the Big Salmon up to the north branch. The valley below is confined between benches 150 feet above the river and sparsely timbered with small pine and poplar.

Land slides have occurred at places where the river through its curves has scoured the foot of the benches and the slopes of the hills have been left bare, thus causing the high cut-banks which appear at intervals. Within a short distance of the river's mouth the benches gradually recede and finally merge into the terrace found along the right bank of the Lewes river.

Large game, such as moose, roam over this section of the country. Bears and beavers were in great numbers along the streams, which would indicate that this country has not been visited lately by the Indians. Salmon, pike, maskinonge, silver trout and white fish are plentiful in the lakes and streams. Berries of several kinds, such as raspberries, blueberries and high bush cranberries, are found along the streams, and large sized currants of fine flavour are plentiful.

The weather this year was exceptionally fine, but a little rain would have been welcomed when the smoke from the forest fires was intense. Cold weather set in towards the beginning of October. On the 3rd of the month, when only about one-third of the way down the Big Salmon river, Mr. Saint Cyr was stopped by ice. It had accumulated in one of the sharp bends in the river and formed an effective dam which backed the water up several feet above the normal level. The river overflowed its banks and submerged the bottom lands on both sides.

On the 7th of October, the weather having moderated, ice ceased to form at the bottom and the river was again open.

Mr. Saint Cyr then resumed the survey and brought the triangulation as far as the western edge of the mountains. On October 12th he reached the mouth of the north Branch and sent the bulky part of his outfit ahead, while he and two men remained behind for the purpose of photographing the surrounding country. The following night a severe snowstorm set in which lasted for two days, and the temperature fell so low, that the river again became covered with floating ice. Fearing to be frozen in, he started at once for the N.W.M.P. post near the confluence of the Big Salmon river. After a hard struggle with ice and very nearly losing his life by drowning, he managed to safely reach the post on the evening of October 16th. Two days later he started up the Lewes river, and near the mouth of the Hootalinqua was picked up by the steamer "Flora," then on her last trip to the White Horse rapids. On the 30th of October he reached Skagway.

Mr. Saint Cyr's report, which is somewhat lengthy, will not be ready until next year.

#### MAGNETIC OBSERVATIONS.

Since 1881, when I took charge of this office, a number of magnetic observations have been made by our surveyors, principally those employed on explorations. Most of these observations were taken with Kew dip circles, of which we have two. A declinometer and a telescope were adapted to these instruments for the purpose of measuring the declination at the same time as the inclination and total force. The constants were ascertained by comparison at the Magnetic Observatory at Toronto. The results of the observations have been tabulated and are submitted herewith.

#### OFFICE WORK.

The correspondence consisted of :—

Letters received . . . . .	1906
Letters sent . . . . .	2010

The accounts examined and payments made were :—

Accounts examined and passed . . . . .	339
Amount of accounts . . . . .	\$133,221.93
Cheques forwarded . . . . .	1106

The following is a synopsis of the work of the draughting office :—

Plans and field notes of subdivision examined . . . . .	98
Plans and field notes of irrigation surveys examined . . . . .	22
Plans and field notes of mineral claims examined . . . . .	24
Plans and field notes of correction and other miscellaneous surveys examined . . . . .	170
Township plans completed for printing . . . . .	90
Declarations of settlers received . . . . .	68
Progress sketches received . . . . .	126
Proofs of plans examined . . . . .	114
Section sketches of trails drawn . . . . .	724
Miscellaneous plans, tracings, &c., made . . . . .	295

In August, 1897, the Geographer, Mr. J. J. Johnston, received instructions to prepare a map of the north western part of the Dominion, including the Yukon district and parts of British Columbia, McKenzie, Athabasca and Alberta. He had been engaged for some years in compiling a map of the northern portions of Canada and had

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the part in question nearly ready. Knowing that it was urgently needed, he immediately set to work to finish it, and by working assiduously he succeeded in completing the manuscript of the northern half of the map and delivering it to the engraver in April, 1898. For some time he had been in poor health, the strain of long hours and close attention to his work proved too much for his strength and he died on the 12th June, 1898.

Mr. Johnston acquired his professional training during a connection of six years with the Ordnance Survey of Scotland, and subsequently for a term of three years with the eminent engineering firm of Fox, Henderson & Co., of London and Birmingham. The commencement of his service with the Canadian Government dates as far back as May, 1857, when he joined the Geological Survey under the late Sir W. E. Logan, with whom he served in the capacity of surveyor and draughtsman for several years. From 1863 to 1868 Mr. Johnston had charge of all the office work in connection with the Trigonometrical Survey of Montreal under Mr. Walter Shanly, C.E. On the completion of this work he established a geographical office in Montreal and compiled, among others, an excellent map of the Dominion. In 1874, upon the recommendation of the Surveyor General, he was selected to take charge of the draughting and geographical work of the Department, being appointed Chief Draughtsman by Order in Council of the 4th March, 1874. Among the many maps he has constructed since he was appointed to this Department, may be named as deserving special notice: (1) the great map, 30 feet by 16 feet, prepared in 1877 for the Paris Exhibition; (2) the general map of part of the North-west territories, including the Province of Manitoba, published in 1883; (3) the chart of the world for the Indian and Colonial Exhibition, 1886; (4) the map of the North Western part of the Dominion now being published. As the result of Mr. Johnston's unexcelled attainments as a draughtsman and practical experience as a publisher, most of his maps, although reproduced by the cheap and expeditious system of photolithography were equal in style and finish to stone engraving. He was thoroughly conversant with all treaties, Acts of Parliament, &c., affecting the boundaries of the Dominion and was one of the most reliable authorities on all questions relating to the topography of Canada in general. On the 5th July, 1890, he was promoted to the position created for him of Geographer of the Department of the Interior and he filled it until his death. Referring to Mr. Johnston's ability, Mr. Walter Shanly stated that as a professional draughtsman he did not know his superior. Col. Dennis, the late Surveyor General, reported that he was probably not excelled in his profession by any other person on the continent, and Sir William Logan entertained an equally favourable opinion of his attainments. Intimate association with Mr. Johnston through a period of seventeen years enabled me to appreciate his sterling qualities, and to recognize that he fully deserved the commendation of the eminent men whom I have quoted.

The Department has also to deplore the death of Mr. J. I. Dufresne, who was employed as draughtsman in this office. Mr. Dufresne was a Dominion Topographical Surveyor and a member of the Board of Examiners for Dominion Land Surveyors.

Three surveyors, Messrs. A. J. Brabazon, J. L. Coté and A. C. Talbot were added to the permanent staff in June last. Mr. John Langlois was appointed to a position of draughtsman on the 1st of April, 1898.

A map on a scale of six miles to an inch has been issued in ten sheets, covering the district between Wrangell, at the mouth of the Stikine River, and the Porcupine River, that is, the north-western portion of British Columbia and the western part of the Yukon Territory. This is the most detailed map of this part of Canada yet published. It has been compiled from various reliable authorities; the Pacific Coast and vicinity from the Canadian boundary surveys and the United States Coast and Geodetic surveys; the interior topography is from surveys of this Department and of the Geological Department supplemented by any other surveys and explorations that were available and authentic. The comparing and compiling of all these authorities, adjusting discrepancies and correcting the work up to the date of the issue entailed a large amount of office work and consumed a great deal of time. Information received since the issue of the map has been collected and put in shape for future use.

A schedule of surveys completed was prepared for notification to the Hudson's Bay Company, in order to vest in the company the title in the lands to which it is



entitled, and also a statement of one-twentieth of the cost of surveys which, under the terms of the deed of surrender, is to be paid by the company.

Work on British Columbia township plans had again to be stopped owing to the difficulty of distinguishing the lands under the control of the province from those belonging to the Dominion. A number of plans of these townships were issued under a mistaken interpretation of the recent agreement with the Provincial Government; most of them are probably inaccurate.

No sectional maps were printed, work upon them being suspended during the early part of the year, so that the men who had been engaged on it could assist on the Yukon maps. Since the latter were printed, the compilation of the sectional maps has been resumed. When returns of surveys are received the information is laid down on the original sheets so as to have them ready for new editions when required. The work on the sectional maps of British Columbia is at a standstill for the same reasons which are preventing the issue of the township plans.

The plans and field notes of mineral claims received were nearly all for claims in the British Columbia Railway belt. They were filed under the arrangement approved by various Orders in Council passed in 1890, according to which the surface rights are granted to the Provincial Government, who subsequently give titles to the persons acquiring the mineral rights.

Reports of corner posts missing, and applications for the re-survey of townships in which the marks of survey have become obliterated, continue to be received in increasing number. 380 files of papers calling for information as to lost corners, errors in lines, copies of field notes, etc., were received and dealt with.

Amongst the miscellaneous work of the office may be mentioned the drafting of descriptions of lots of land for insertion in patents, the calculation of areas, preparation of information to accompany instructions to surveyors, the examination and copying of surveyors' reports, and various researches in connection with surveys.

The work executed by the photographers and lithographers has been tabulated, and is shown by the schedules appended.

#### BOARD OF EXAMINERS.

The Board of Examiners for Dominion Land Surveyors has lost one of its members, Mr. J. I. Dufresne, D.T.S., whose death has already been mentioned. He had been a member of the Board since February, 1889.

Regular meetings were held, as required by law, on the second Monday in February and August; there being no candidates for examination the Board on each occasion adjourned the same day. One candidate had given notice for examination in February, but he did not present himself.

Complaints having been made of the want of facilities for examination in British Columbia, special meetings were held on December 13th and 23rd, 1897, to consider this matter. It was recommended that Mr. Tom Kains, D.L.S., Surveyor-General of British Columbia, be appointed a member of the Board in order to hold examinations in British Columbia. This suggestion was adopted, and Mr. Kains was appointed by Order in Council of the 28th February, 1898; he was duly sworn in on the 21st June. It was arranged that he should conduct an examination at Victoria, commencing on June 20th. A number of persons made inquiries and formal notices of candidature were received from four parties, but no examination was held because the candidates failed to appear. The same result followed later in the summer when arrangements were made for an examination at Kamloops before Mr. W. Pearce.

Another special meeting was held on December 28th, 1897, to consider the advisability of suggesting an amendment to the Dominion Lands Act to facilitate the admission of British Columbia surveyors as Dominion land surveyors. In accordance with the recommendations of the Board, clause 109 of the Act was amended in this direction at the last session of Parliament. The clause before its amendment required that a Provincial land surveyor should serve one year as pupil with a Dominion land surveyor before coming up for examination. Provincial surveyors practising their

## Department of the Interior.

profession found it difficult to comply with this requirement ; under the amendment, service as pupil with a provincial land surveyor for a similar period to that required by the Dominion Lands Act is accepted as sufficient, and a surveyor who has so served and obtained his provincial commission by passing an examination, can be examined at any time for Dominion land surveyor.

The Secretary of the Board of Examiners for surveyors of New Zealand transmitted a copy of the regulations as to examinations and surveys in that colony ; and in return, information was sent him regarding surveys, &c., as carried out by this Department. A complimentary copy of a book of tables called "Hour Angles without Logarithms" was also received from the author, Mr. P. J. Leach, P. L. S., of Victoria, B.C.

On the application of Dr. W. L. Goodwin, director of the School of Mining, Kingston, Ont., and after consideration of the courses of study in that institution, the Board decided to accept the diploma in mining engineering of that school as equivalent to the diploma of Civil Engineer mentioned in clause 111 of the Dominion Lands Act.

Under clause 125 of the Dominion Lands Act, every Dominion Land surveyor must be provided with a subsidiary standard of length stamped as correct by the Department of Inland Revenue: a surveyor performing his duties without a standard measure is liable to suspension for twelve months. Thirteen of these standards were issued to surveyors during the twelve months and one standard re-tested. Six dozen new standard measures were obtained from Messrs. Chesterman & Co., of Sheffield, England. Including these, 216 standards have been received in all, of which 141 have been issued to Dominion Land Surveyors. Forty-eight standards were also supplied to the British Columbia Government for the use of the surveyors of that Province. A list is appended of the Dominion Land Surveyors who have been supplied with standard measures and who are therefore legally qualified to survey Dominion Lands.

The correspondence of the Board amounted to :—

Letters received.....	136
Letters sent.....	130

### APPENDICES.

The following documents are appended :—

- Schedule of Dominion Land Surveyors employed.
- Statement of work performed in the Survey Records Branch.
- Schedule of work executed in the photographic office.
- Schedule of work executed in the lithographic office.
- List of Dominion Land Surveyors who have been supplied with standard measures.
- Table of magnetic results.
- Report of the Ontario-Manitoba Boundary Commissioners.
- Reports of the surveyors employed.
- Examination papers of the Board of Examiners for Dominion Land Surveyors.

I have the honour to be, Sir,

Your obedient servant,

E. DEVILLE,  
*Surveyor General.*

## No. 1.

## SCHEDULE of Dominion Land Surveyors employed, and work done by them, during the season of 1898.

Surveyor.	Address.	Description.
Antliff, J. H.....	Ottawa, Ont .....	Assistant to Henry Lawe.
Aylsworth, C. F.....	Madoc, Ont.....	Re-marking of townships 26 and 27, ranges 31 and 32, west of principal meridian, and township 30, range 1, west of 2nd meridian.
Belleau, J. A. ....	Ottawa, Ont.....	Assistant to J. C. Desmeules.
Brabazon, A. J.....	Ottawa, Ont.....	Re-survey of townships 25, ranges 5, 6 and 7, township 26, range 7 and reposting of township 26, ranges 5 and 6; all west of the 2nd meridian.
Belanger, P. R. A....	Ottawa, Ont.....	Subdivision of part of township 36, ranges 24 and 25; part of township 35, range 26; the east outlines of townships 30, 31, 32 and 33, ranges 22 and 23; township 34, range 23; township 36, range 25; the north outlines of township 32, ranges 20, 21 and 22; and of township 36, range 24; the east boundaries of township 32, range 21; of townships 34, 35 and 36, range 22; and of townships 35 and 36, range 23; and the north boundaries of township 36, ranges 22 and 23; all west of principal meridian.
Bourne, R.....	Winnipeg, Man.....	Re-survey of village of Whitemouth and Assistant to J. L. Coté.
Bourget, C. A.....	Ste. Adelaide de Pabos, Quebec.....	Assistant to P. R. A. Belanger.
Cote, J. L.....	Ottawa, Ont.....	Subdivision of townships 10 and 11, range 12; north boundary townships 9 and 12, range 12; east boundary township 12, range 12; and township 9, range 13; re-survey of east boundary townships 9 and 10, range 12; township 12, range 13; north boundary township 8, range 12; and re-survey of village of Whitemouth, all east of principal meridian.
Cadenhead, J. A....	Dawson, N. W. T.....	No report.
Cautley, R. W. ....	Dawson, N. W. T.....	Survey of placer mining claims on Dominion Creek, Yukon District.
Ducker, W. A.....	Winnipeg, Man.....	Subdivision survey contract No. 1, part of township 22, range 26; west of principal meridian.
Dickson, James.....	Fenelon Falls, Ont....	Subdivision of township 26, range 15; fractional townships 27 and 28, range 17; part of township 29, range 17; and north and south outlines of township 27, range 16; all west of the principal meridian.
Desmeules, J. C.....	Murray Bay, Que.....	Subdivision of township 34, ranges 28, 29 and 30; all west of the principal meridian.
DuBerger, C. C.....	Waterloo, Que.....	Subdivision of parts of township 51, range 19, and townships 51 and 52, range 21; the whole of township 52, range 19; the east outline of townships 51 and 52, range 22; and part of the north outline of township 51, range 22; all west of the 4th meridian.
Fontaine, L. E.....	Levis, Que .....	Assistant to A. C. Talbot.
Fafard, F. X.....	Quebec, Que.....	Assistant to A. J. Brabazon.
Fawcett, Thos.....	Dawson, N. W. T.....	Gold Commissioner and in charge of surveys in the Yukon district.
Gibbon, James.....	Dawson, N. W. T.....	Subdivision of townsites of Dawson and Klondike, survey of mining claims on Dominion Creek and its tributaries, and lots 9, 10 and 11, group 2; all in the Yukon district.
Gosselin, L.....	Hedleyville, Que .....	Assistant to A. F. Martin.
Hubbell, E. W.....	Ottawa, Ont.....	Subdivision of parts of township 36, range 26; township 37, range 27; townships 35 and 36, ranges 28 and 29, and township 33, range 31; the north outline of township 32, range 27, and township 36, range 30; the east outlines of townships 33 and 34, range 27; townships 33, 34, 35 and 36, range 31; townships 35 and 34, range 32, and township 32, range 33; all west of the principal meridian and re-survey of east outline of township 32, range 1, west of 2nd meridian.

## Department of the Interior.

SCHEDULE of Dominion Land Surveyors employed, and work done by them, during the season of 1898—*Concluded.*

Surveyor.	Address.	Description.
Lawe, Henry.....	Winnipeg, Man.....	Re-survey of township 17, range 2; township 18, range 3; parts of townships 17, ranges 1 and 3, and of the townsite of Gimli; all east of the principal meridian.
Martin, A. F. ....	Winnipeg, Man.....	Subdivision of parts of township 23, range 19; townships 29 and 30, range 18; townships 24 and 25, range 25, and township 29, range 19; re-survey of north outline of township 23, range 18, and renewal of survey marks in township 26, range 19; all west of principal meridian.
McLean, J. K.....	Elora, Ont.....	Subdivision of part of township 55, range 1; the whole of townships 54 and 55, range 2; fractional township 54, range 3, and north outline of township 53, range 1; all west of the 5th meridian.
McArthur, J. J.....	Ottawa, Ont.....	Exploration from Fort Selkirk up the Stewart River to Lansing Creek and track survey of part of the Dalton trail, all in Yukon district.
Reid, J. L.....	Prince Albert, Sask...	Renewal of survey marks in St. Laurent settlement and in townships 42, 43 and 44, range 1, west of 3rd meridian; survey of the north outlines of townships 44, ranges 12, 13 and 14; and the east outlines of townships 43 and 44, ranges 12 and 13, and of township 44, range 14, west of the 2nd meridian.
Ross, J. E.....	New Westminster, B.C.	Subdivision of parts of townships 17 and 18, range 16; township 19, range 20; townships 17, 18 and 19, range 21; townships 18 and 19, range 22; townships 17, ranges 24 and 25, west of 6th meridian and of townships 19, 20, 22 and 25, east of coast meridian, re-survey of east boundary of north-east quarter of section 8, township 2, west of coast meridian and Dyking lands in township 40, east of coast meridian.
Saunders, B. J.....	Athens, Ont.....	Subdivision of fractional townships 4 and 5, range 24, and of township 4, range 25, the whole of township 2, range 21, and part of township 1, range 23, all west of 4th meridian; parts of townships 9 and 10, range 2; townships 16, ranges 2 and 3; township 17, range 3; all west of 5th meridian, re-survey of part of town of Macleod, reposting part of east boundary township 2, range 30, and traverse of part of Belly river in township 2, range 28, all west of 4th meridian and reposting of blocks in the Town of Banff.
Saint Cyr, A.....	Ottawa, Ont.....	Exploration of the district between Teslin Lake and Pelly river, Yukon district.
Talbot, A. C.....	Ottawa, Ont.....	Subdivision of township 42, range 16; township 40, range 17, townships 41 and 42, range 18; part of township 47, range 26; township 48, ranges 26 and 27, and fractional township 48, range 28; all west of 4th meridian.
Vincent, F.....	Murray Bay, Que.....	Assistant to J. E. Woods.
Woods, J. E.....	Aylmer, Que.....	Subdivision of part of townships 23 and 24, range 7; fractional townships 23 and 24, range 8; part of township 24, range 9, and renewal of corners in township 22, range 14, all west of the principal meridian.
Wheeler, A. O.....	Calgary, Alta.....	In charge of Canadian Irrigation surveys.

## No. 2.

## SURVEY RECORDS BRANCH.

STATEMENT of work performed for the twelve months ending 30th June, 1898.

	Number.	\$ cts.
Files received and dealt with.....	1,144	
Letters drafted and sent out.....	1,391	
Memorandums, draft memos. to Council, &c.....	352	
Plans, tracings, &c., made and compiled.....	458	
Plans mailed to agents, registrars, &c.....	653	
Cash fees received for plans, &c.....		87 04
Letters sent direct to agents, registrars, &c.....	153	
Statutory declarations copied and sent to agents.....	66	
Pages of field notes copied.....	278	
Prints of plans received and stored.....	5,350	
Original plans recorded.....	169	
Original field books recorded.....	64	
Patents engrossed.....	176	
Timber licenses prepared.....	74	
Copies of Yukon map corrected.....	1,000	

FRANK CLAYTON,

*Surveyor and Draughtsman in charge of Branch.*

DEPARTMENT OF THE INTERIOR,

SURVEY RECORDS BRANCH, 31st December, 1898.

## No. 3.

SCHEDULE showing work executed by the Photographic Office from 1st November, 1897,  
to 31st October, 1898.

Class of Work Done.	For the Topographical Surveys Branch.	For the Geologi- cal Survey Department.	Totals.
Wet plate negatives made.....	123	91	214
Dry plates developed.....	40	26	66
Bromide prints developed.....	477	160	637
Silver prints made.....	1,909	393	2,302
Transparencies made.....	498	48	546
Totals.....	3,047	718	3,765

# Department of the Interior.

## No. 4.

SCHEDULE showing work executed by the Lithographic Office from 1st November, 1897,  
to 31st October, 1898.

Months.	Maps.		Townships.		Forms.	
	Number of Maps.	Number of Copies.	Number of Townships.	Number of Copies.	Number of Forms.	Number of Copies.
1897.						
November.....	6	50	3	159	2	600
December.....	6	148	9	477		
1898.						
January.....	4	72	7	361	2	100
February.....	3	117	5	265	2	1,275
March.....	2	12	16	851	2	400
April.....	3	42	8	426		
May.....	3	90	10	530	3	350
June.....	3	90	10	530	1	209
July.....	4	125	6	318		
August.....	4	200	6	318		
September.....	2	69	3	159	1	500
October.....	1	125	6	318	1	200
Totals.....	41	1,140	89	4,712	14	3,625

### RECAPITULATION.

Number of maps.....	41	Number of copies.....	1,140
" townships.....	89	" ".....	4,712
" forms.....	14	" ".....	3,625
<b>Total.....</b>	<b>144</b>	<b>Total.....</b>	<b>9,477</b>

## No. 5.

## LIST of of Dominion Land Surveyors who have been supplied with Standard Measures.

Name.	Address.	Date of Appointment.	Remarks.
Austin, T. F.	Dewdney, Alta.	April 14, '72.	
Aylsworth, C. F.	Madoc, Ont.	May 17, '86.	
Bayne, G. A.	Winnipeg, Man.	April 14, '72.	
Belanger, P. R. A.	Ottawa, Ont.	May 17, '80.	Surveys staff, Dept. of Interior.
Belleau, J. A.	Ottawa, Ont.	May 15, '83.	" "
Bigger, C. A.	Ottawa, Ont.	Mch. 30, '82.	
Bolton, L.	Listowel, Ont.	April 14, '72.	
Bouchette, C. J.	Selkirk, Man.	April 14, '72.	
Bourgault, A.	St. Jean Port Joly, Que.	Mch. 29, '83.	
Bourgeault, C. E.	St. Jean Port Joly, Que.	Feb. 21, '88.	
Bourne, R.	Fort Rouge, Winnipeg, Man.	June 17, '75.	
Brabazon, A. J.	Ottawa, Ont.	May 12, '82.	Surveys staff, Dept. of Interior.
Bray, S.	Ottawa, Ont.	Nov. 14, '83.	Dept. of Indian Affairs.
Brodie, S.	Fort Qu'Appelle, Assa.	April 14, '72.	
Burke, W.	Minnedosa, Man.	April 14, '72.	
Burwell, H. M.	Vancouver, B.C.	Feb. 17, '87.	
Chalmers, T. W.	Edmonton, Alta.	Nov. 7, '88.	District Engineer, N.W.T.
Coté, J. L.	Ottawa, Ont.	Mch. 21, '90.	Surveys staff, Dept. of Interior.
Cotton, A. F.	New Westminster, B.C.	May 11, '80.	
Dennis, J. S.	Regina, Assa.	Nov. 19, '77.	Dominion Topographical Surveyor,
Denny, H. C.	Calgary, Alta.	April 1, '82.	Deputy Commiss'ner, Public Works,
Desmeules, J. C.	Murray Bay, Que.	April 14, '72.	N.W.T.
Dickson, H. G.	Victoria, B.C.	Mch. 19, '89.	
Dickson, J.	Fenelon Falls, Ont.	April 14, '72.	
Doupe, J.	Winnipeg, Man.	April 14, '72.	
Doupe, J. L.	Winnipeg, Man.	Oct. 6, '88.	
Dreury, W. S.	Victoria, B.C.	Nov. 14, '83.	
Driscoll, A.	Chilliwack, B.C.	Feb. 23, '87.	
DuBerger, C. C.	Waterloo, Que.	Nov. 17, '81.	
Ducker, W. A.	Winnipeg, Man.	Mch. 30, '83.	
Dumais, P. T. C.	Hull, Que.	Mch. 29, '82.	
Fawcett, T.	Dawson, Yukon Territory.	Nov. 18, '76.	Dominion Topographical Surveyor, Chief of Surveys Yukon Territory.
Fawcett, A.	Dawson, Yukon Territory.	Feb. 22, '93.	Alaska Commercial Co.
Fitzpatrick, J. D. A.	Kildare, Que.	Feb. 23, '87.	
Foster, F. L.	Toronto, Ont.	April 14, '72.	
Garden, J. F.	Vancouver, B.C.	May 13, '80.	
Garden, C.	Winnipeg, Man.	April 14, '72.	
Gibbon, J.	Dawson, Yukon Territory.	Feb. 12, '91.	Gold Commissioner's office, Yukon
Gore, L. S.	Victoria, B.C.	April 19, '79.	Territory.
Gosselin, L.	Hedleyville, Que.	May 15, '80.	
Greene, T. D.	Ottawa, Ont.	May 19, '84.	Dept. of Indian Affairs.
Harris, J. W.	Winnipeg, Man.	April 14, '72.	City Surveyor, Winnipeg.
Henderson, W.	Chilliwack, B. C.	Nov. 17, '83.	
Hubbell, E. W.	Ottawa, Ont.	May 19, '84.	Surveys staff, Dept. of the Interior.
Jephson, R. J.	Calgary, Alta.	May 12, '80.	District Engineer, N.W.T.
Klotz, O. J.	Ottawa, Ont.	Nov. 19, '77.	Dominion Top. Surveyor, Astronomer,
Latimer, F. H.	Detroit, Michigan.	Nov. 13, '85.	Dept. of the Interior.
Laurie, R. C.	Battleford, Sask.	April 27, '83.	District Engineer, N.W.T.
Lawe, H.	Winnipeg, Man.	April 14, '72.	
Lendrum, R. W.	Edmonton, Alta.	May 15, '80.	
Magrath, C. A.	Lethbridge, Alta.	Nov. 16, '81.	Dominion Topographical Surveyor,
Malcolm, L.	Blenheim, Ont.	April 14, '72.	Land Commissioner, Alberta Rail-
Martin, A. F.	Winnipeg, Man.	April 14, '72.	way and Canal Co.
Miles, C. F.	Rat Portage, Ont.	April 14, '72.	
McAree, J.	Toronto, Ont.	April 14, '72.	Dominion Topographical Surveyor.

## Department of the Interior.

### LIST of Dominion Land Surveyors who have been Supplied with Standard Measures.—*Concluded.*

Name.	Address.	Date of Appointment.	Remarks.
McFee, A.	Innisfail, Alta.	April 19, '79.	
McKenzie, J.	New Westminster, B.C.	Nov. 18, '88.	Dominion Lands Agent, New Westminster.
McLatchie, J.	Nelson, B.C.	April 14, '72.	
McLean, J. K.	Elora, Ont.	April 1, '82.	
McPhillips, G.	Windsor, Ont.	June 17, '75.	
Ogilvie, W.	Dawson, Yukon Territory.	April 14, '72.	Commissioner, Yukon Territory.
Patrick, A. P.	Calgary, Alta.	Nov. 19, '77.	Dominion Topographical Surveyor.
Pearce, W.	Calgary, Alta.	May 10, '80.	Supt. of Mines, Dept. of the Interior.
Rainboth, G. C.	Aylmer, Que.	April 14, '72.	
Reid, J. L.	Prince Albert, Sask.	April 14, '72.	District Engineer, N.W.T.
Ritchie, J. F.	Nelson, B. C.	Jan. 7, '89.	
Robertson, H. H.	Montmagny, Que.	April 14, '72.	
Saint Cyr, A.	Ottawa, Ont.	Feb. 17, '87.	Surveys staff, Dept. of the Interior.
Saunders, B. J.	Athens, Ont.	Nov. 16, '84.	
Seager, E.	Rat Portage, Ont.	April 14, '72.	
Selby, H. W.	Wabigoon, Ont.	Nov. 15, '82.	
Shaw, C. A. E.	Victoria, B.C.	May 10, '80.	
Speight, Thomas.	Toronto, Ont.	Nov. 16, '82.	
Starkey, S. M.	Starkey's P.O., N.S.	April 14, '72.	
Stewart, G. A.	Calgary, Alta.	April 14, '72.	
Stewart, L. B.	Toronto, Ont.	Nov. 22, '82.	Dom. Topograph. Surveyor, Professor, School of Practical Science, Toronto.
Stewart, E.	Collingwood, Ont.	April 14, '72.	
Talbot, A. C.	Ottawa, Ont.	May 13, '80.	Surveys staff, Dept. of the Interior.
Thompson, W. T.	Fort Qu'Appelle, Assa.	Nov. 19, '77.	Dominion Topographical Surveyor and
Tremblay, A. J.	Les Eboulements, Que.	Feb. 18, '90.	District Engineer, N.W.T.
Turnbull, T.	Winnipeg, Man.	Mar. 29, '82.	
Tyrrell, J. W.	Hamilton, Ont.	Feb. 16, '87.	
Vaughan, J. W.	Vancouver, B.C.	June 11, '78.	
Vicars, J.	New Westminster, B.C.	May 17, '86.	
Wheeler, A. O.	Calgary, Alta.	Nov. 21, '82.	In charge Canadian Irrigation Survey.
Wilkins, F. W.	Norwood, Ont.	May 18, '81.	Dominion Topographical Surveyor.
Wilkinson, W. D.	Toronto, Ont.	Feb. 22, '93.	
Woods, J. E.	Aylmer, Que.	Nov. 14, '85.	Surveys staff, Dept of the Interior.

P. B. SYMES,

*Secretary of the Board of Examiners for Dominion Land Surveyors.*



TABLE of

No. of Station.	Place.	Latitude.	Longitude	Year.	Month and Day.	Hour and Minute.
1	East Main.....	52 14 7	78 29 3	1890	11th Sept.	5.25 to 5.45 p.
	".....	52 14 7	78 29 3	1890	2nd Oct.	4.25 to 4.41 p.
	".....	52 14 7	78 29 3	1890	11th Sept.	
	".....	52 14 7	78 29 3	1890	2nd Oct.	
	".....	52 14 7	78 29 3	1890	2nd "	
2	Rupert's House.....	51 29 5	78 43 4	1890	13th Aug.	5 14 to 5 38 p.
	".....	51 29 5	78 43 4	1890	13th "	
	".....	51 29 5	78 43 4	1890	5th Oct.	
3	Moose Factory.....	51 14 5	80 56 0	1890	24th July.	4.15 to 4.48 p.
	".....	51 14 5	80 56 0	1890	22nd "	
	".....	51 14 5	80 56 0	1890	23rd "	
4	Mouth of Albany River, Lake St. Joseph.....	51 12 7	90 09 8	1885	10th Sept.	3.50 p.....
	".....	51 12 7	90 09 8	1885	11th "	8.30 a.....
5	Lake St. Joseph.....	51 11 2	90 37 0	1885	6th "	9.30 a.....
	".....	51 11 2	90 37 0	1885	6th "	4.10 p.....
7	On a portage, Root River.....	50 49 7	91 22 7	1885	23rd Aug.	8.00 a.....
	".....	50 49 7	91 22 7	1885	23rd "	4.10 p.....
8	Root River.....	50 41 2	91 35 8	1885	16th "	10.00 a.....
	".....	50 41 2	91 35 8	1885	16th "	3.15 p.....
9	Lac Seul.....	50 23 7	92 04 8	1885	9th "	9.20 a.....
	".....	50 23 7	92 04 8	1885	9th "	4.40 p.....
10	Hudson's Bay Company's Post, Lac Seul.....	50 19 5	92 14 4	1885	6th "	4.30 p.....
	".....	50 19 5	92 14 4	1885	7th "	10.00 a.....
11	Shanty Narrows, Lac Seul.....	50 29 3	92 51 57	1885	1st "	5.33 p.....
	".....	50 29 3	92 51 57	1885	2nd "	7.47 a.....
12	English River.....	50 38 9	93 10 2	1885	29th July.	5.30 p.....
	".....	50 38 9	93 10 2	1885	29th "	
13	Camping Lake, English River.....	50 38 1	93 24 1	1885	26th "	9.40 a.....
	".....	50 38 1	93 24 1	1885	26th "	
14	Tide Lake, English River.....	50 20 6	93 57 0	1885	18th "	6.15 p.....
	".....	50 20 6	93 57 0	1885	19th "	9.30 a.....
15	Grassy Narrows, English River.....	50 10 7	94 02 2	1885	15th "	5.00 p.....
	".....	50 10 7	94 02 2	1885	15th "	
16	English River.....	50 16 0	94 30 6	1885	12th "	8.10 a.....
	".....	50 16 0	94 30 6	1885	12th "	
6	Lake St. Joseph.....	50 58 8	91 08 0	1885	29th Aug.	5.50 p.....
	".....	50 58 8	91 08 0	1885	30th "	10.17 a.....
17	English River.....	50 21 8	94 39 3	1885	9th July.	6.00 p.....
	".....	50 21 8	94 39 3	1885	9th "	
	".....	50 21 8	94 39 3	1885	10th "	
18	".....	50 14 5	94 59 3	1885	5th "	9.50 a.....
19	Port Arthur.....	48 26 0	89 12 6	1884	14th "	
20	Near Rat Portage, Winnipeg River.....	49 46 3	94 29 4	1885	22nd June.	10.30 a.....
	".....	49 46 3	94 29 4	1885	19th Oct.	
	".....	49 46 3	94 29 4	1885	19th "	
21	Winnipeg River.....	49 53 1	94 34 2	1885	25th June.	10.00 a.....
22	Sand Lake, Winnipeg River.....	50 02 5	94 41 9	1885	28th "	10.45 a.....
23	Settlement Mouth of White Dog River.....	50 08 2	94 54 4	1885	1st July..	5.45 p.....
24	Cat River.....	51 05 7	91 24 2	1885	20th Sept.	10.50 a.....
	".....	51 05 7	91 24 2	1885	20th "	3.33 p.....
25	H. B. Co.'s Post, Cat Lake.....	51 44 3	91 46 2	1885	30th "	4.00 p.....
	".....	51 44 3	91 46 2	1885	1st Oct....	6.40 a.....
26	Cat River.....	51 30 0	91 49 7	1885	27th Sept.	9.39 a.....
	".....	51 30 0	91 49 7	1885	27th "	4.13 p.....
27	Cat Lake.....	51 46 3	91 51 1	1885	1st Oct....	
	".....	51 46 3	91 51 1	1885	1st "	
52	Duck Nest, Lake Winnipeg.....	53 15 5	97 33 5	1886	3rd Aug..	8.45 a.....
	".....	53 15 5	97 33 5	1886	3rd "	
54	Bay of Winnipeg River, Lake Winnipeg.....	50 41 7	96 31 4	1886	23rd June.	9.00 a.....
	".....	50 41 7	96 31 4	1886	23rd "	
55	About 6 miles north of Loon Creek, L. Winnipg.....	51 36 9	96 37 3	1886	9th July..	8.45 a.....
	".....	51 36 9	96 37 3	1886	9th "	
56	Selkirk, Man.....	50 09 2	96 51 8	1886	7th June..	
	".....	50 09 2	96 51 8	1886	8th "	

# Department of the Interior.

## Magnetic Results.

Declination.	Hour and Minute.	Dip.	Hour and Minute.	Total Force C. G. S. Units.	Temperature.	Observers.	Instruments.
+15 01.6 W.	3.20 to 3.46 p.	80 43.4				Wm. Ogilvie....	K. D. C. No. 8.
+14 51.5 W.	4.16 to 4.36 p.	80 46.7				"	"
	2.38 to 2.57 p.	80 47.4				"	"
	3.35 to 3.56 p.	80 42.6				"	"
+14 15.1 W.	10.58 to 11.22 a.	80 26.6				"	"
	11.57 to 12.18 a.	80 34.2				"	"
	3.47 to 4.09 p.	80 33.8				"	"
+15 14.7 W.	10.20 to 10.48 a.	80 48.5				"	"
	11.30 to 11.57 a.	80 52.0				"	"
- 6 09.0 E.	4.12 to 4.55 p.	80 18.3	5.00 to 5.25 p.	64806	60	Th. Fawcett....	K. D. C. No. 77.
- 5 33.4 E.	9.00 to 9.30 a.	80 21.4	9.35 to 10.00 a.	64837	56	"	"
- 5 22.0 E.	10.00 to 10.30 a.	80 25.3	10.35 to 11.00 a.	64501	52	"	"
- 5 18.8 E.	4.35 to 5.00 p.	80 19.0	5.55 to 6.20 p.	64627	48	"	"
- 7 20.3 E.	8.27 to 8.55 a.	79 42.1	9.00 to 9.26 a.	65131	51	"	"
- 7 07.5 E.	4.26 to 4.54 a.	79 39.4	4.56 to 5.15 p.	65003	48	"	"
- 6 55.7 E.	0.08 to 0.33 p.	79 27.1	0.35 to 1.00 p.	65258	67	"	"
- 6 50.6 E.	3.28 to 3.52 p.	79 26.1	3.54 to 4.10 p.	65163	70	"	"
- 8 22.4 E.	4.40 to 5.35 p.	79 03.9	5.38 to 6.00 p.	65574	72	"	"
- 8 09.1 E.	6.07 to 6.30 p.	79 04.9	10.36 to 11.00 a.	65391	70	"	"
- 7 03.9 E.	4.43 to 5.12 p.	79 35.3	5.18 to 5.40 p.	65344	70	"	"
- 7 09.4 E.	10.00 to 10.33 a.	79 34.4	10.35 to 11.00 a.	65372	69	"	"
- 6 54.7 E.	5.35 to 6.20 p.	79 16.3	6.25 to 6.50 p.	65574	59	"	"
- 7 15.7 E.	8.00 to 3.55 a.	79 14.9	9.00 to 9.32 a.	65205	78	"	"
- 9 21.0 E.	5.50 to 6.30 p.	79 10.8	6.40 to 7.06 p.	64860	74	"	"
	7.36 to 8.10 p.	79 13.0	7.36 to 8.10 p.	64743	71	"	"
- 8 20.0 E.	9.40 to 11.00 a.	79 16.1	11.05 to 11.48 a.	64773	75	"	"
	4.00 to 4.28 p.	79 18.2	4.30 to 5.05 p.	64632	67	"	"
- 9 24.8 E.	6.15 to 7.25 p.	79 20.0	7.30 to 8.05 p.	64599	60	"	"
- 9 23.8 E.	9.30 to 10.35 a.	79 22.9	10.40 to 11.25	64863	63	"	"
- 9 28.0 E.	5.00 to 5.50 p.	79 09.3	6.00 to 6.30 p.	64292	74	"	"
	7.30 to 8.00 p.	79 02.5	8.15 to 8.50 p.	64710	65	"	"
- 9 44.7 E.	9.06 to 9.45 a.	79 19.0	10.25 to 10.46 a.	64049	83	"	"
	10.50 to 11.52 a.	79 13.6	0.00 to 0.35 p.	64137	75	"	"
-24 27.2 E.	6.10 to 6.38 p.	81 46.6	6.40 to 7.04 p.	64349	55	"	"
-23 43.9 E.	10.20 to 10.40 a.	81 48.8	11.56 to 12.15 a.	64129	61	"	"
-10 21.2 E.	6.00 to 7.00 p.	79 25.9	7.30 to 7.55 p.	64355	54	"	"
	8.00 to 8.40 p.	79 18.7	7.00 to 7.20 a.	64574	64	"	"
- 9 07.0 E.	9.15 to 11.10 a.	79 07.9	0.10 to 0.32 p.	64643	89	"	"
	2.40 to 3.20 p.	78 09.0	3.45 to 5.30	64021	67	E. Deville....	"
-11 55.7 E.	10.25 to 12.45 a.	78 31.3	1.23 to 2.10 p.	64438	87	Th. Fawcett....	"
	8.38 to 9.00 a.	78 36.1	9.40 to 10.11 a.	64448	34	"	"
	9.03 to 9.35 a.	78 38.5	10.11 to 10.50 a.	64027	37	"	"
-10 09.1 E.	10.10 to 11.30 a.	78 28.3	2.00 to 2.45 p.	65044	79	"	"
-10 53.2 E.	11.20 to 12.45 a.	78 31.4	1.20 to 1.43 p.	65385	82	"	"
- 9 41.0 E.	6.17 to 7.00 p.	78 28.2	7.02 to 8.00 p.	652184	72	"	"
- 5 35.3 E.	10.15 to 11.03 a.	80 05.7	11.10 to 11.40 a.	64911	70	"	"
- 5 35.0 E.	4.03 to 4.30 p.	80 04.5	4.35 to 5.00 p.	64933	60	"	"
- 4 50.1 E.	4.00 to 4.30 p.	80 29.0	4.32 to 5.00 p.	64974	46	"	"
- 4 31.1 E.	7.40 to 8.10 a.	80 29.0	8.18 to 8.42 a.	64746	47	"	"
- 5 12.3 E.	10.02 to 10.24 a.	80 11.6	10.26 to 11.00 a.	65329	67	"	"
- 4 43.2 E.	4.35 to 5.07 p.	80 07.0	5.00 to 5.25 p.	65484	61	"	"
	3.26 to 4.15 p.	80 24.6	4.20 to 5.07 p.	65377	55	"	"
	4.17 p.	80 21.8	5.08 to 5.30 p.	65233	55	"	"
-16 41.6	9.00 to 10.00 a.	80 50.8	10.30 to 11.30 a.	59963	70	F. W. Wilkins...	"
	1.30 to 2.30 p.	80 46.8	2.45 to 3.30 p.	00263	69	"	"
-12 40.2 E.	9.30 to 10.30 a.	78 59.4	10.45 to 11.45 a.	59991	71	"	"
	1.30 to 2.30 a.	78 58.2	2.45 to 3.45 p.	59641	70	"	"
-14 41.6 E.	0.15 to 1.30 p.	78 49.5	1.45 to 2.30 p.	59811	78	"	"
	9.00 to 10.00 a.	78 48.9	10.30 to 11.15 a.	60037	72	"	"
	12.00 to 1.15 p.	78 22.8	1.30 to 3.00 p.	60088	69	"	"
	9.00 to 10.45 a.	78 20.6	11.00 to 12.00 a.	60249	70	"	"

TABLE of Magnetic

No. of Station.	Place.	Latitude.	Longitude	Year.	Month and Day.	Hour and Minute.
57	About 4 m. south of War Path Riv., L. Winnipeg	52 18 3	98 14 6	1886	22nd Sept.	9.00 a. ....
	" " " "	52 18 3	98 14 6	1886	22nd "	" " " " " "
58	Brandon	49 50 0	99 57 0	1884	18th July.	2.12 p. ....
	" " " "	49 50 0	99 57 0	1884	18th "	5.22 p. ....
	" " " "	49 50 0	99 57 0	1884	19th "	9.02 a. ....
	" " " "	49 50 0	99 57 0	1884	19th "	11.32 a. ....
75	End of Long Point, Lake Winnipeg.	53 02 5	98 27 5	1886	9th Sept.	8.45 a. ....
	" " " "	53 02 5	98 27 5	1886	9th "	" " " " " "
76	North side of Long Point, Lake Winnipeg.	53 04 2	98 44 5	1886	6th "	8.45 a. ....
	" " " "	53 04 2	98 44 5	1886	6th "	" " " " " "
77	North end of Limestone Bay, Lake Winnipeg	53 53 8	98 48 7	1886	19th Aug.	8.15 a. ....
	" " " "	53 53 8	98 48 7	1886	19th "	" " " " " "
80	Intersection of 3rd Base and 2nd Initial Mer .	49 41 9	101 59 9	1881	" " " "	" " " " " "
84	On 3rd Base, West Boundary of Range IV	49 41 9	102 32 4	1881	" " " "	" " " " " "
85	" " " " VI	49 41 9	102 48 7	1881	" " " "	" " " " " "
87	" " " " VIII	49 41 9	103 04 9	1881	" " " "	" " " " " "
89	" " " " X	49 41 9	103 04 9	1881	" " " "	" " " " " "
90	" " " " XII	49 41 9	103 21 2	1881	" " " "	" " " " " "
93	" " " " XIV	49 41 9	103 53 7	1881	" " " "	" " " " " "
96	" " " " XVI	49 41 9	104 10 0	1881	" " " "	" " " " " "
100	" " " " XVIII	49 41 9	104 26 3	1881	" " " "	" " " " " "
	Regina.	50 27	104 36 5	1884	21st July.	9.05 a. ....
	" " " "	50 27	104 36 5	1884	" " " "	12.05 p. ....
	" " " "	50 27	104 36 5	1884	21st July.	3.50 p. ....
	" " " "	50 27	104 36 5	1884	" " " "	6.30 p. ....
102	On 3rd Base, West Boundary of Range XX	49 41 9	104 42 5	1881	" " " "	" " " " " "
105	" " " " XXII	49 41 9	104 58 7	1881	" " " "	" " " " " "
107	" " " " XXIV	49 41 9	105 15 0	1881	" " " "	" " " " " "
129	Sturgeon Weir River.	54 20 9	101 42 9	1888	7th Oct.	9 50 a. ....
129	" " " "	54 20 9	101 42 9	1888	7th "	10 20 a. ....
130	Cumberland House.	53 56 7	102 19 2	1888	14th "	2 30 p. ....
130	" " " "	53 56 7	102 19 2	1888	14th "	2 40 p. ....
143	Battleford.	52 42 7	108 18 8	1884	28th July.	10 00 a. ....
	" " " "	52 42 7	108 18 8	1884	28th "	3 00 p. ....
	" " " "	52 42 7	108 18 8	1884	28th "	6 00 p. ....
	" " " "	52 42 7	108 18 8	1884	29th "	7 40 a. ....
	" " " "	52 42 7	108 18 8	1884	29th "	9 10 a. ....
	" " " "	52 42 7	108 18 8	1884	29th "	0 35 p. ....
149	Athabaska River.	54 51 0	113 25 0	1888	27th May.	4 00 p. ....
	" " " "	54 51 0	113 25 0	1888	28th "	6 50 p. ....
150	Fort Edmonton	53 32 0	113 31 0	1888	17th "	1 30 p. ....
	" " " "	53 32 0	113 31 0	1888	17th "	" " " " " "
159	Fort McMurray	56 43 9	111 13 6	1888	23rd June.	9 00 a. ....
	" " " "	56 43 9	111 13 6	1888	23rd "	" " " " " "
160	Mouth of Lesser Slave River.	55 29 0	114 03 5	1888	4th "	Noon
	" " " "	55 29 0	114 03 5	1888	4th "	3 13 p. ....
156	Fourth Base on 5th Mer	50 02 9	114 00 0	1887	19th July.	1 50 p. ....
157	Calgary	51 03 2	114 04 9	1787	20th June.	" " " " " "
163	Stephen, Rocky Mts.	51 27 0	116 17 7	1886	14th May.	4 00 p. ....
164	Near Leancoil—along C. P. R.	51 13 8	116 37 9	1886	28th "	4 45 p. ....
165	Between Palliser and Golden—along C. P. R.	51 17 9	116 51 7	1886	4th June.	11 00 a. ....
166	One Mile North of Golden	51 18 8	116 58 5	1886	9th "	5 54 p. ....
167	Near Beaver—Keafe and Clarke's Siding.	51 30 9	117 20 4	1886	18th "	9 21 a. ....
168	Near Rogers Pass—along C. P. Railway.	51 17 6	117 31 0	1886	30th "	2 45 p. ....
169	Near Revelstoke—along C. P. Railway.	51 00 1	118 11 9	1886	15th Aug.	4 23 p. ....
170	Sicamous Narrows.	50 49 7	118 59 6	1885	21st Oct.	11 20 a. ....
	" " " "	50 49 7	118 59 6	1885	21st "	" " " " " "
171	About 120 yds. west of Sta. 1,569 of Traverse	50 44 7	119 14 5	1885	4th "	4 50 p. ....
	" " " "	50 44 7	119 14 5	1885	4th "	" " " " " "
172	Lake Shuswap, Blind Bay.	50 51 0	119 19 5	1885	20th Sept.	" " " " " "
	" " " "	50 51 0	119 19 5	1885	20th "	" " " " " "
173	South west end of Salmon Arm, Lake Shuswap	50 45 9	119 19 9	1885	25th "	5 10 p. ....
	" " " "	50 45 9	119 19 9	1885	25th "	" " " " " "
	" " " "	50 45 9	119 19 9	1885	27th "	5 15 p. ....

# Department of the Interior.

## Results—Continued.

Declination.	Hour and Minute.	Dip.	Hour and Minute.	Total force C. G. S. Units.	Temperature.	Observers.	Instruments.
—15 48' 4" E.	9.10 to 10.00 a.	79 43' 9"	10.15 to 11.00 a.	59959	50	F. W. Wilkins.	K. D. C. No. 77.
.....	11.15 to 12.15 a.	79 47' 4"	0.45 to 1.30 p.	59530	55	"	"
—14 46' E.	3.20 to 4.20 p.	77 34' 9"	4.45 to 5.55 p.	64590	72	E. Deville.	"
14 48'.....	.....	.....	.....	.....	.....	"	"
—15 07' E.	10.00 to 11.00 a.	77 37' 0"	11.15 to 12.00 a.	64535	82	"	"
—14 47' 0" E.	.....	.....	.....	.....	.....	"	"
—15 39' 1" E.	9.00 to 10.00 a.	80 26' 5"	10.15 to 11.00 a.	59857	61	F. W. Wilkins.	"
.....	10.15 to 11.15 a.	80 23' 4"	11.30 to 12.15 a.	59922	62	"	"
—17 31' 8" E.	9.00 to 10.00 a.	81 01' 5"	10.30 to 11.15 a.	59825	68	"	"
.....	10.30 to 12.15 a.	80 58' 9"	0.45 to 1.30 p.	59880	70	"	"
—15 13' 8" E.	8.30 to 9.30 a.	81 03' 4"	9.45 to 10.30 a.	59415	68	"	"
.....	10.45 to 11.30 a.	80 58' 1"	11.40 to 12.15 a.	59843	69	"	"
—18 00' 0" E.	.....	.....	.....	.....	.....	O. J. Klotz.	T. T. 3-in. needle.
—19 30' 0" E.	.....	.....	.....	.....	.....	"	"
—18 45' 0" E.	.....	.....	.....	.....	.....	"	"
—18 50' 0" E.	.....	.....	.....	.....	.....	"	"
—18 50' 0" E.	.....	.....	.....	.....	.....	"	"
—18 30' 0" E.	.....	.....	.....	.....	.....	"	"
—19 10' 0" E.	.....	.....	.....	.....	.....	"	"
—19 40' 0" E.	.....	.....	.....	.....	.....	"	"
—19 45' 0" E.	.....	.....	.....	.....	.....	"	"
18 45' 0".....	9.30 to 10.50 a.	77 06' 0"	11.05 to 12.00 a.	64006	76	E. Deville.	K. D. C. No. 77.
18 32' 0".....	.....	.....	.....	.....	.....	"	"
18 40' 0".....	4.15 to 5.05 p.	77 04' 0"	5.15 to 6.15 p.	64030	.....	"	"
18 42' 0".....	.....	.....	.....	.....	.....	"	"
—19 30' 0" E.	.....	.....	.....	.....	.....	O. J. Klotz.	T. T. 3-in. needle.
—19 25' 0" E.	.....	.....	.....	.....	.....	"	"
—19 20' 0" E.	.....	.....	.....	.....	.....	"	"
—18 27' 3" E.	10.30 to 10.55 a.	80 16' 3"	11.27 to 11.45 a.	64698	60	Thos. Fawcett.	K. D. C. No. 77.
—19 06' 7" E.	10.58 to 11.20 a.	80 15' 3"	11.45 to 12.05 a.	64979	60	"	"
—19 91' 1" E.	2.44 to 3.10 p.	80 26' 4"	3.10 to 4.00 p.	64758	40	"	"
—19 37' 9" E.	3.12 to 3.33 p.	80 21' 4"	4.00 to 4.15 p.	64536	40	"	"
—22 12' 7" E.	3.20 to 4.10 p.	77 50' 0"	4.20 to 5.00 p.	63760	74	E. Deville.	"
—21 57' 2" E.	.....	.....	.....	.....	.....	"	"
—21 59' 9" E.	.....	.....	.....	.....	.....	"	"
—22 15' 4" E.	9.20 to 10.00 a.	77 52' 0"	.....	.....	.....	"	"
—22 06' 2" E.	.....	.....	.....	.....	.....	"	"
—21 58' 2" E.	.....	.....	.....	.....	.....	"	"
—25 18' 0" E.	4.26 to 5.05 p.	78 08' 3"	5.07 to 5.40 p.	63514	70	Thos. Fawcett.	"
—25 02' 2" E.	7.35 to 8.28 a.	78 07' 2"	7.40 to 8.28 a.	64146	51	"	"
—26 14' 0" E.	1.50 to 3.15 p.	77 30' 4"	4.11 to 5.00 p.	63908	.....	"	"
.....	3.21 to 3.53 p.	77 30' 9"	.....	.....	.....	"	"
—29 47' 7" E.	9.30 to 10.00 a.	80 07' 8"	10.04 to 10.35 a.	63340	57	"	"
.....	10.40 to 11.04 a.	80 09' 8"	11.04 to 11.30 a.	63711	59	"	"
—28 07' 8" E.	1.00 to 1.30 p.	78 31' 7"	1.38 to 2.05 p.	63083	53	"	"
—28 10' 6" E.	1.38 to 2.40 p.	78 33' 3"	2.07 to 2.40 p.	63233	52	"	"
—23 53' 7" E.	.....	74 37' 5"	.....	.....	.....	J. S. Dennis.	"
—24 54' 8" E.	.....	.....	.....	.....	.....	"	"
—23 55' 0" E.	4.45 to 5.25 p.	75 04' 33"	5.30 to 5.55 p.	61771	47	O. J. Klotz.	"
—23 33' 0" E.	5.00 to 5.35 p.	74 49' 30"	5.43 to 6.10 p.	61739	59	"	"
25 40' 0" E.	11.30a to 0.05 p.	74 54' 13"	0.07 to 0.50 p.	61683	85	"	"
—25 37' 0" E.	4.11 to 4.36 p.	74 50' 22"	4.40 to 5.14 p.	61711	72	"	"
—26 34' 0" E.	9.40 to 10.03 a.	74 52' 30"	10.06 to 10.35 a.	61660	59	"	"
—25 27' 5" E.	3.01 to 3.22 p.	74 41' 36"	3.25 to 3.44 p.	61665	61	"	"
—25 17' 5" E.	4.52 to 5.36 p.	74 26' 24"	5.50 to 6.44 p.	61444	70	"	"
—24 46' 2" E.	9.45 to 10.02 a.	74 06' 1"	10.08 to 10.27 a.	61411	44	W. Ogilvie.	"
.....	10.51 to 11.10 a.	74 07' 8"	10.33 to 10.46 a.	61227	45	"	"
—24 37' 5" E.	3.08 to 3' 27 p.	73 58' 9"	3.32 to 3.48 p.	61393	65	"	"
.....	4.18 to 4.40 p.	73 58' 2"	3.54 to 4.11 p.	61457	62	"	"
.....	2.55 to 3.20 p.	73 58' 0"	3.25 to 3.45 p.	61688	66	"	"
.....	4.20 to 4.45 p.	73 59' 0"	3.50 to 4.13 p.	61637	65	"	"
—24 55' 9" E.	3.25 to 3.41 p.	73 59' 0"	3.45 to 4.06 p.	61642	62	"	"
.....	4.33 to 4.59 p.	73 57' 1"	4.10 to 4.27 p.	61430	62	"	"
—24 46' 9" E.	2.48 to 3.11 p.	73 58' 8"	3.18 to 3.34 p.	61388	59	"	"

TABLE of Magnetic

No. of Station.	Place.	Latitude.	Longitude	Year.	Month and Day.	Hour and Minute.
173	South west end of Salmon Arm, Lake Shuswap	50 45.9	119 19.9	1885	27th Sept.	.....
174	Little Shuswap Lake	50 48.6	119 41.2	1885	13th "	4.45 p.
	"	50 48.6	119 41.2	1885	13th "	.....
175	About 350 yds. south of Sta. 1,289 of Traverse	50 38.9	120 06.9	1885	6th "	4.00 p.
	"	50 38.9	120 06.9	1885	6th "	.....
176	Kamloops	50 39.1	120 20.2	1885	2nd "	3.50 p.
	"	50 39.1	120 20.2	1885	2nd "	.....
	"	50 39.1	120 20.2	1885	3rd "	5.30 p.
	"	50 39.1	120 20.2	1885	3rd "	.....
177	Van Horn	50 44.4	120 50.3	1885	23rd Aug.	.....
178	St. Cloud	50 45.9	121 07.8	1885	16th "	4.55 p.
	"	50 45.9	121 07.8	1885	16th "	.....
179	Near Black Canon	50 39.6	121 17.9	1885	9th "	4.55 p.
	"	50 39.6	121 17.9	1885	9th "	.....
180	Spences Bridge	50 24.3	121 20.7	1885	2nd "	Noon
	"	50 24.3	121 20.7	1885	2nd "	.....
181	Salmon River	49 58.3	121 30.6	1885	12th July.	5.00 p.
	"	49 58.3	121 30.6	1885	12th "	.....
182	Cisco Station	50 07.4	121 34.4	1885	19th "	.....
	"	50 07.4	121 34.4	1885	19th "	.....
183	Harrison River	49 13.4	121 56.0	1885	14th June	6.20 p.
	"	49 13.4	121 56.0	1885	14th "	6.25 p.
184	Port Hammond	49 12.1	122 38.9	1885	26th May.	6.38 p.
	"	49 12.1	122 38.9	1885	26th "	.....
185	Port Moody	49 17.0	122 52.4	1885	3rd June.	4.45 p.
	"	49 17.0	122 52.4	1885	3rd "	4.55 p.
186	Victoria	48 25.0	123 21.5	1885	20th May.	6.10 p.
	"	48 25.0	123 21.5	1885	20th "	6.05 p.
187	Lake Lyndeman	59 47.2	135 04.8	1885	25th June.	1.00 p.
	"	59 47.2	135 04.8	1885	25th "	.....
188	Frog Portage	55 24.1	103 15.2	1888	21st Sept.	1.55 p.
	"	55 24.1	103 15.2	1888	21st "	2.10 p.
189	Hudson's Bay Co's Post, Stanley	55 25.4	104 18.9	1888	15th "	8.10 a.
	"	55 25.4	104 18.9	1888	15th "	8.30 a.
190	Mountain Portage	55 33.4	104 19.2	1888	13th "	3.40 p.
	"	55 33.4	104 19.2	1888	13th "	.....
191	Big Devil's Portage	55 41.5	104 33.5	1888	12th "	7.50 p.
192	Trout Falls	55 42.9	104 58.8	1888	7th "	3.30 p.
	"	55 42.9	104 58.8	1888	7th "	3.50 p.
193	Black Bear Island Lake	55 42.5	105 35.5	1888	2nd "	9.15 a.
	"	55 42.5	105 35.5	1888	2nd "	1.20 p.
194	Pin Portage	55 44.0	105 37.0	1888	1st "	1.50 p.
	"	55 44.0	105 37.0	1888	1st "	2.00 p.
195	Knee Lake	55 50.8	106 33.4	1888	26th Aug.	9.30 p.
	"	55 50.8	106 33.4	1888	26th "	2.00 p.
196	Pelican Portage	55 54.1	107 07.8	1888	20th "	11.00 a.
197	Narrow Rapids Lake	55 56.5	107 22.1	1888	19th "	1.50 p.
	"	55 56.5	107 22.1	1888	19th "	.....
198	Isle a la Crosse	55 25.6	107 37.0	1888	11th "	3.00 p.
	"	55 25.6	107 37.0	1888	11th "	.....
199	Narrows of Buffalo Lake	55 37.9	108 13.5	1888	5th "	0.50 p.
	"	55 37.9	108 13.5	1888	5th "	.....
200	River La Loche	56 11.6	108 57.5	1888	29th July.	2.10 p.
	"	56 11.6	108 57.5	1888	29th "	.....
201	La Loche Lake	56 26.6	109 12.8	1888	22nd "	2.10 p.
	"	56 26.6	109 12.8	1888	22nd "	.....
202	Portage La Loche	56 35.2	109 30.2	1888	18th "	10.00 a.
	"	56 35.2	109 30.2	1888	18th "	.....
203	Clear Water River	56 42.7	110 03.9	1888	8th "	10.00 a.
	"	56 42.7	110 03.9	1888	8th "	.....
204	Clear Water River	56 39.4	110 46.6	1888	1st "	10.40 a.
	"	56 39.4	110 46.6	1888	1st "	2.00 p.

# Department of the Interior.

Results—Continued.

Declination.	Hour and Minute.	Dip.	Hour and Minute.	Total Force C. G. S. Units.	Temperature.	Observers.	Instruments.
.....	4.10 to 4.30 p.	74 00.4	3.45 to 4.04 p.	61444	59	W. Ogilvie.....	K. D. C. No. 8.
-27 07.5 E.	2.30 to 2.50 p.	73 55.2	2.55 to 3.20 p.	61430	64	"	"
.....	4.05 to 4.25 p.	73 48.0	3.30 to 3.56 p.	61697	63	"	"
-24 59.4 E.	2.15 to 2.35 p.	73 41.4	2.40 to 3.03 p.	60982	84	"	"
.....	3.30 to 3.52 p.	73 41.0	3.08 to 3.23 p.	60964	84	"	"
-24 20.5 E.	2.00 to 2.23 p.	73 35.8	2.27 to 2.42 p.	60706	75	"	"
.....	3.25 to 3.48 p.	73 34.2	2.53 to 3.18 p.	60650	75	"	"
-23 35.5 E.	3.48 to 4.10 p.	73 37.5	4.15 to 4.30 p.	60544	75	"	"
.....	5.00 to 5.20 p.	73 39.0	4.35 to 4.54 p.	60853	79	"	"
.....	2.50 to 3.15 p.	73 28.0	3.20 to 3.43 p.	60374	71	"	"
-23 51.5 E.	2.45 to 3.10 p.	74 00.8	3.18 to 3.40 p.	61660	94	"	"
.....	4.22 to 4.47 p.	74 02.6	3.50 to 4.13 p.	61568	96	"	"
-27 22.5 E.	2.48 to 3.06 p.	73 37.5	3.10 to 3.32 p.	61227	88	"	"
.....	4.08 to 4.38 p.	73 40.3	3.42 to 4.02 p.	61107	88	"	"
-23 43.8 E.	9.45 to 10.20 a.	73 26.8	10.25 to 10.55 a.	60475	85	"	"
.....	11.47 to 12.17 a.	73 27.2	11.05 to 11.35 a.	60720	85	"	"
-24 59.0 E.	3.20 to 3.48 p.	72 39.4	3.50 to 4.15 p.	60632	85	"	"
.....	5.18 to 5.38 p.	72 40.7	4.22 to 4.41 p.	60517	82	"	"
.....	1.50 to 2.16 p.	72 44.7	2.20 to 2.44 p.	60655	84	"	"
.....	3.16 to 3.40 p.	72 41.1	2.50 to 3.10 p.	60669	80	"	"
-22 21.3 E.	4.00 to 4.30 p.	72 28.3	4.35 to 5.00 p.	59936	75	"	"
-22 25.4 E.	5.33 to 5.54 p.	72 28.0	5.05 to 5.25 p.	60106	73	"	"
-22 46.2 E.	3.10 to 3.43 p.	71 58.6	3.48 to 4.15 p.	60300	68	"	"
.....	5.00 to 5.38 p.	71 59.0	4.20 to 4.48 p.	60641	66	"	"
-22 45.8 E.	2.15 to 2.52 p.	72 13.0	2.55 to 3.30 p.	61181	70	"	"
-22 46.3 E.	4.12 to 4.35 p.	72 10.5	3.36 to 3.50 p.	61024	70	"	"
-22 32.8 E.	3.45 to 4.25 p.	71 26.0	4.45 to 5.12 p.	59521	70	"	"
-22 36.8 E.	5.42 to 6.00 p.	71 30.2	5.20 to 5.36 p.	59217	60	"	"
-32 16.8 E.	10.55 to 11.19 a.	77 03.9	11.23 to 11.50 a.	59868	56	W. Ogilvie.....	K. D. C. No. 8.
.....	0.19 to 0.47 p.	77 06.5	11.52 to 0.13 p.	59735	56	"	"
-21 10.8 E.	2.37 to 3.00 p.	81 00.7	3.02 to 3.23 p.	64509	60	Thos. Fawcett....	K. D. C. No. 77.
-20 30.4 E.	3.44 to 4.10 p.	80 59.1	3.25 to 3.36 p.	64469	60	"	"
-23 38.2 E.	0.10 to 0.40 p.	80 45.0	9.50 to 10.10 a.	64084	70	"	"
-22 53.9 E.	0.45 to 1.13 p.	80 45.1	10.10 to 10.32 a.	64077	70	"	"
-20 10.7 E.	4.25 to 4.37 p.	80 33.4	4.40 to 4.58 p.	63891	55 to 60	"	"
.....	5.15 to 5.30 p.	80 35.3	5.00 to 5.13 p.	63730	55	"	"
-23 04.7 E.	.....	.....	.....	.....	.....	"	"
-21 48.7 E.	4.02 to 4.22 p.	80 37.1	4.24 to 4.40 p.	64217	60	"	"
-22 52.0 E.	5.00 to 5.35 p.	80 38.1	4.42 to 4.58 p.	64068	60	"	"
-21 14.0 E.	10.35 to 11.00 a.	80 43.2	11.45 to 12.00 a.	65121	60	"	"
-21 32.0 E.	11.00 to 11.30 a.	80 37.1	0.02 to 0.18 p.	64797	60	"	"
-21 58.5 E.	.....	.....	.....	.....	.....	"	"
-21 40.1 E.	.....	.....	.....	.....	.....	"	"
-27 19.6 E.	10.30 to 10.57 a.	80 48.2	11.00 to 11.17 a.	65052	70	"	"
-27 53.7 E.	11.20 to 11.43 a.	80 45.8	11.48 to 12.06 a.	65290	65	"	"
-27 24.7 E.	.....	.....	.....	.....	.....	"	"
-24 03.9 E.	2.30 to 3.00 p.	80 39.8	3.00 to 3.30 p.	64193	76	"	"
.....	3.35 to 4.00 p.	80 34.2	5.15 to 5.40 p.	64262	73	"	"
-25 02.9 E.	5.45 to 6.35 p.	79 56.1	4.15 to 4.35 p.	63711	75	"	"
.....	5.45 to 6.35 p.	79 58.1	6.40 to 7.04 p.	63710	66	"	"
-25 15.9 E.	1.40 to 2.06 p.	80 11.9	2.13 to 2.36 p.	64270	68	"	"
.....	2.42 to 3.08 p.	80 13.3	3.10 to 3.35 p.	64286	60	"	"
-28 10.0 E.	3.00 to 3.22 p.	80 34.0	3.24 to 3.43 p.	64564	61	"	"
.....	3.45 to 4.20 p.	80 33.1	4.25 to 4.45 p.	64350	59	"	"
-25 49.0 E.	2.45 to 3.20 p.	80 31.9	4.32 to 5.02 p.	64092	76	"	"
.....	3.47 to 4.25 p.	80 35.5	3.22 to 3.45 p.	63519	86	"	"
-26 37.3 E.	10.40 to 11.10 a.	80 29.3	11.14 to 11.35 a.	63974	88	"	"
.....	11.45 a. to 0.13 p.	80 28.3	0.15 to 0.40 p.	64170	81	"	"
-26 53.5 E.	11.15 to 11.45 a.	80 27.4	11.50 a. to 0.15 p.	63770	76	"	"
.....	0.20 to 0.50 p.	80 25.5	0.55 to 1.20 p.	64252	65	"	"
-28 54.3 E.	11.10 to 11.40 a.	80 09.1	11.40 to 12.00 a.	64193	66	"	"
-28 56.9 E.	3.40 to 4.00 p.	80 12.1	4.04 to 4.50 p.	64600	68	"	"

TABLE of Magnetic

No. of Station.	Place.	Latitude.	Longitude	Year.	Month and Day.	Hour and Minute.
		°   '   "	°   '   "			
97	N. E. Cor. Sec. 1, Tp. 2, R. 17, W. of 2nd I.M. . . . .	50 45·7	104 13·1	1881	.....	.....
99	S. E. Cor. Tp. 29, R. 18, W. of 2nd I.M. . . . .	51 26·7	104 23·6	1881	14th Sept.	9·00 a. ....
103	N. E. Cor. Sec. 13, Tp. 21, R. 21, W. of 2nd I.M. . . . .	50 47·4	104 46·4	1881	30th July.	9·00 a. ....
104	S. E. Cor. Tp. 29, R. 21, W. of 2nd I.M. . . . .	51 26·7	104 49·0	1881	22nd Sept.	8·00 a. ....
108	S. E. Cor. Tp. 21, R. 25, W. of 2nd I.M. . . . .	50 44·8	105 19·9	1881	11th Aug.	8·00 a. ....
109	S. E. Cor. Tp. 29, R. 25, W. of 2nd I.M. . . . .	51 26·7	105 22·8	1881	27th Sept.	10·00 a. ....
111	S. E. Cor. Tp. 21, R. 29, W. of 2nd I.M. . . . .	50 44·8	105 53·1	1881	29th Aug.	10·00 a. ....
112	Intersection of 8th Base with 3rd I.M. . . . .	51 26·7	106 00·0	1881	13th Oct.	Noon . . . . .

Certified a true copy from the Records of my Office.

23rd February, 1899.

# Department of the Interior.

Results—*Concluded.*

Declination.	Hour and Minute.	Dip.	Hour and Minute.	Total Force C. G. S. Units.	Temperature.	Observers.	Instruments.
° /		° /			°		
—19 40' 0" E.	.....	.....	.....	.....	.....	W. T. Thompson	T. T. 3 in. Middle.
—19 46' 0" E.	.....	.....	.....	.....	.....	"	"
—20 05' 0" E.	.....	.....	.....	.....	.....	"	"
—20 00' 0" E.	.....	.....	.....	.....	.....	"	"
—20 25' 0" E.	.....	.....	.....	.....	.....	"	"
—20 25' 0" E.	.....	.....	.....	.....	.....	"	"
—20 43' 0" E.	.....	.....	.....	.....	.....	"	"
—21 00' 0" E.	.....	.....	.....	.....	.....	"	"

W. F. KING,  
*Chief Astronomer.*



## No. 7.

REPORT OF SURVEY OF THE BOUNDARY BETWEEN ONTARIO AND  
MANITOBA.

TORONTO, 30th April, 1898.

To the Hon. CLIFFORD SIFTON,  
Minister of the Interior,  
Ottawa,  
and Hon. J. M. GIBSON,  
Commissioner of Crown Lands,  
Toronto.

SIRS,—We have the honour to submit the following report on the survey of the boundary line between the Provinces of Ontario and Manitoba performed in accordance with instructions from your Departments, dated the 21st and 19th of August, 1897, respectively.

After visiting Ottawa in company with the director of surveys for Ontario and conferring with the Deputy Minister of the Interior and the Surveyor General of the Dominion, we proceeded to arrange for the work and after due preparation, left for Rat Portage with our staff. At this point we engaged the remainder of our party, purchased our supplies and having hired a small steamer to carry the party and outfit to the point of commencement of the line near the north-west angle of the Lake of the Woods, we left Rat Portage on the first of September, reaching the North-west Angle River the same evening, and camped near where we were to begin our work. This point is marked upon the ground by an iron monument planted about six chains north of the North-west Angle River and it was from this monument that measurements were taken to locate the initial point of the Ontario and Manitoba boundary. This monument and a similar one at a distance of thirty-nine chains and thirty-nine links due north of it were planted by the International Boundary Commissioners in 1872 and mark the boundary at these points between Canada and the United States. They are the iron posts referred to in the above mentioned instructions and are also shown in the plan and field-notes herewith submitted. It will be noticed that the distance between these two iron posts or monuments, as deduced from the figures given in our instructions, is thirty-nine chains and thirty links, whereas our measurements as checked on the ground show it to be thirty-nine chains and thirty-nine links.

It may be well to state that all our measurements along the line were taken by two different sets of chainmen, each set using a Chesterman steel tape, one of which was sixty-six feet and the other one hundred feet in length.

Pages 88 to 90 of the returns show a comparative statement of the measurements with each chain for each mile.

In fixing the north-west point, which was to be our initial point, we made it 150 chains and one link north from the first mentioned, or south monument.

The boundary we were called upon to lay down is defined in Chap. 28, 52 Vic., 1888-89, of the Imperial Parliament in the following words: "Thence along a line drawn due north until it strikes the middle line of the course of the river discharging the waters of the lake called Lake Seul, or the Lonely Lake, whether above or below its confluence with the stream flowing from the Lake of the Woods towards Lake Winnipeg."

Having taken an astronomical observation for azimuth on the evening of the 1st of September, at our point of commencement, the work of opening the line was begun on the following day. We then continued the line due north to its intersection with the Winnipeg River at a point about seven miles below the mouth of the English River

## Department of the Interior.

the distance from the initial point at the north-west angle to a post which we planted on the left bank of the Winnipeg River, and 20 links from the water's edge, being 58 miles, 27 chains and 20 links. The Winnipeg River at this point is about 15 chains wide.

In running and laying down the line two instruments were used: one a small light transit, in charge of one of our assistants who kept near the axemen and directed them in their work of opening and clearing the line, the other a Dominion lands reiteration transit theodolite, with which astronomical observations were taken, and by means of which the line was actually laid down from the points of greatest elevation along its course, thus insuring as long sight as possible consistent with accuracy. These sights, as will be seen from the field notes, averaged over a mile in length and as a "sky line" was cut out in advance, all instrumental stations were well selected, so that in many cases under favourable conditions two back stations could be seen in the production of the line. By this means, as will be noticed from the table of observations, only slight corrections in azimuth were found necessary. Owing to the intense cold and cloudy weather from the latter part of November up to the time of the completion of the field work on the 11th of December, we found it impossible to get the exact result from the observations that we attempted to take at different points towards the end of the work. Two of these latter observations, though not entirely satisfactory owing to the frost interfering with the movements of the plates of the instrument, were sufficient to show that the line was within reasonable limit of error, and not out more than the average error shown by previous observations.

The initial point being under water it was impossible to mark it upon the ground by a post or monument and it will therefore be seen that the first posts planted are situated on hard ground at 25.00 chains on the first mile. They consist of a cedar post with an iron post alongside, each being marked with the words "ONT." on the east side and "MAN." on the west side with the additional wording "25 chains north of the N. W. Angle" on the south side of the cedar post.

Each and every mile of the boundary excepting where the mile point falls in water is defined by similar posts each marked with the words "ONT." and "MAN." with the number of the mile from the initial point followed by the letter "M" on the south side.

Bearing trees where available were taken and regularly marked as shown in the field-notes, and the trees on either side of the line throughout the work were blazed on the three sides as directed. In addition to the regular mile posts good cedar posts with iron posts alongside were planted on the shores of Shoal Lake, Snow Shoe Bay and Indian Bay and all the larger lakes and also on the islands crossed by the line in Indian Bay and High Lake; these are marked on the east and west sides the same as those above mentioned, while the cedar post in each and every instance has the distance from the initial point marked on its south side. Similar cedar and iron posts were planted at the intersection of the line with the southerly and northerly limits of the right of way of the Canadian Pacific Railway, marked "ONT." on the east side, and "MAN." on the west side and "C.P.R." on the side facing the right of way.

Although not instructed to do so we planted wooden posts at the intersection of our line with the boundaries of the Indian Reserves met with in the work. These posts have the words "ONT." and "MAN." on the east and west sides respectively and "I. R." on the side facing the reserve. A cedar post also, marked as above on the east and west sides, was planted at the intersection of the portage from Long Pine Lake to West Hawk Lake, being on a frequently travelled route.

With the exception of six, all the above mentioned posts are surrounded with well built cairns of stones called stone mounds in the field-notes. The field-notes show explicitly how each and every post is marked as well as their position.

The lines run in the survey of Dominion lands, Indian reserves and mining locations in the vicinity of the boundary were connected with our work.

A careful traverse with transit and chain was also made along the line of the Canadian Pacific Railway eastward from the boundary to the Dominion Government astronomical station at Kalmar and the latitudes and departures of the various courses in this traverse were duly calculated and are shown in the field-notes. The boundary

line is intersected by the Canadian Pacific Railway at a point distant twenty-eight miles and seventy-three chains from the initial point at the north-west angle. This point of intersection is very nearly ninety-nine and three-quarters miles east of Winnipeg, and about two miles west of Ingolf station.

In addition to the running of the boundary line and the traverse of the Canadian Pacific Railway considerable micrometer work was done in the traversing of parts of Shoal Lake, Indian Bay, High Lake and West Hawk Lake, also in the survey of that part of the Winnipeg River and its expansions from our line easterly to the mouth of the English River.

The results of the explorations on either side of the line are shown upon the plans herewith.

The country on each side of the North-west Angle River is comparatively level and the soil is of good quality. The chief timber is poplar. On proceeding north the land becomes swampy up to Shoal Lake and is thinly timbered with spruce and tamarac.

After leaving the bay of Shoal Lake higher land is reached, broken with hills and swamps. The soil is clay and the rocks belong to the Laurentian and Huronian formations; the timber consists of poplar, birch and pitch pine. This class of country extends to the neighbourhood of Rice Bay and from there to Snow-Shoe Bay is quite broken and the timber has been very nearly all destroyed by fires.

Indian Bay is a fine sheet of water about five miles long and two wide, and contains a number of islands of various sizes nearly all of which are wooded with green timber, principally birch, spruce, poplar and cedar, with a few clumps of white pine. Some very good oak timber was noticed at the narrows leading from the bay into Shoal Lake. Between Indian Bay and High Lake the land is hilly and covered with green timber; the soil is sandy, with frequent rock exposures.

The line crosses a point and two islands in High Lake and intersects the third base line of the Dominion system of surveys on the most northerly of the latter.

From High Lake to the thirty-second mile post the country is mostly burnt, and a large portion was entirely stripped of timber by the far-reaching and destructive fire which extended east from the prairie in the fall of 1897.

The country in both provinces adjoining the boundary south of the Canadian Pacific Railway is attracting considerable attention from mining men at the present time owing to the discoveries of gold in the vicinity, and numerous mining locations and claims have already been laid out and evidences of development work were seen in a number of places.

The contacts between Laurentian and Huronian rocks are noted in the field-notes where they were visible, and the last contact we saw occurs near the centre of the twenty-seventh mile, and from this point to the end of the work only Laurentian rocks were seen. North of the Canadian Pacific Railway the country as a rule is very rocky and broken, with very little soil fit for cultivation. It contains numerous lakes with clear water well stocked with fish.

The timber consists of pitch-pine, poplar, spruce, birch and tamarac, where not completely destroyed by fire. The effect of the recent and destructive fire above referred to was not entirely lost sight of until we reached the neighbourhood of Trout Lake on the forty-first mile, although some belts had escaped its ravages.

From Trout Lake to the Winnipeg River the timber is generally small and of poor quality, consisting of pitch-pine, birch, spruce and tamarac. Some railway ties have been taken out in the vicinity of the thirty-third and thirtieth-fourth miles and a few swamps farther north contain a small quantity of fair sized spruce and tamarac. It is perhaps worthy of note to mention that no cedar timber exists between the Canadian Pacific Railway and the Winnipeg River along the line, and our wooden posts for this portion of the work were all brought from West Hawk Lake.

As stated in the first part of this report the boundary line strikes the stream of the Winnipeg River at a point about seven miles below the confluence of the English River with the former.

The waters of the two rivers unite in a wide lake-like expansion having some ten or twelve islands in it. They pass to the north and west of a large island and unite again in a narrow channel and after a short distance once more divide and pass to the

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north and south of another large island about two and one-half miles long and one and one-half miles wide. Upon each of these latter divergent streams there is a water-fall of five or six feet, the northerly one being again divided in two by a small island; these two main divergent streams flow, the one along the north side and the other along the east, south and west sides of the last mentioned large island, and after having widened out into lake-like areas unite about one mile up stream from where the boundary line intersects the river proper. There are a number of islands in all these stretches and the main shores are generally rugged. The exact position of these two rivers between their junction and our line is shown on the plan of the boundary line herewith, and on the traverse sheet accompanying the field-notes.

The necessity for having the boundary line laid down has been felt for some time by the people in the vicinity, especially so in that portion south of the railway where mining work has been going on.

The route we travelled in the prosecution of the work is shown on the plan.

After completing the field work we returned with our men to Ingolf by way of North Crow Duck Lake and a chain of lakes leading to Cross Lake and down the latter to the Canadian Pacific Railway and thence to Rat Portage where our men were paid off. It was then decided that we should meet in Toronto for the purpose of preparing our returns of survey.

In concluding this report which we have made as brief as possible, we desire to say that any differences of opinion which we may have had in carrying out the work were all satisfactorily adjusted by ourselves.

We desire to express our gratitude to the officials of both the Department of the Interior and the Department of Crown Lands with whom we came in contact in connection with the work, for their many courtesies extended to us, and to thank the members of our staff for their untiring efforts in the prosecution of the survey.

Herewith will be found full returns in triplicate, one copy being for the Dominion, one for Ontario and one for Manitoba.

We have the honour to be, Sirs,

Your obedient servants,

E. STEWART,

B. J. SAUNDERS,

*Dominion and Ontario Land Surveyors, Boundary Commissioners.*

## No. 8.

## REPORT OF HENRY LAWE, D.L.S.

SURVEYS IN EASTERN MANITOBA,

WINNIPEG, 25th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I beg to submit the following report upon the re-survey of township 17, ranges 1, 2 and 3, and township 18, range 3 east of the principal meridian, in the Province of Manitoba, performed by me last season under your instructions, dated the 28th of January, 1898. I commenced the survey at the original corner (an iron bar and mound) standing at the north-east angle of township 16, range 2, east, and retraced the meridian line north from the corner to the original corner standing at the north-east angle of section 1, township 17, range 2, east. I also retraced the base line east and west to original corners found standing at the north-east angles of section 35, township 17, range 2, east, and section 31, township 17, range 3, east. I found the bearing of the base line westerly from the iron corner post to be correct, assuming that the meridian line was correct, but the bearing easterly from the iron bar I found to be 22 minutes too far south of east. I also found the chaining east across the north limit of section 31, township 17, range 3, east, to exceed the 80 chains by 98 links. So that at the start I was satisfied that I would find a great discrepancy between the measurements on the ground in township 17, range 3, east, with those shown on the plan of the original survey furnished me. I found township 18, range 3, east, to agree fairly well with the original survey.

The outlines of township 17, range 2, east, came out very correctly with those shown on the map of the original survey, but the subdivision appears to have been made with a short chain, for all the north and south section lines were short, excepting those adjoining the north boundary of the township, which were considerably in excess. The most expeditious way to find the original corners was to trace up and follow the old blazed lines. These I always found after removing the underbrush.

I have been very careful, as required by my instructions, not to put in new corners any way affecting lands already disposed of, but where no lands have been disposed of, I put in new corners in accordance with the regulations governing lost corners.

I have the honour to be, Sir,

Your obedient servant,

HENRY LAWE,  
*Dominion Lands Surveyor.*

# Department of the Interior.

No. 9.

## REPORT ON THE RE-SURVEY OF THE TOWN OF GIMLI.

WINNIPEG, 3rd February, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I beg to submit to you the following report with reference to the re-survey of the townsite of Gimli performed by me last season, according to your instructions dated the 29th of September, 1898.

All through the survey I only found three corner marks of the original survey, namely, the posts between lots 2 and 3, 3 and 4, and 4 and 5 in the first range; however, with the aid of these and of the original corner at the north-east angle of section 17, township 19, range 4 east, there are sufficient data to establish the western boundary of the townsite. As to the north and south boundaries, the lines I ran appear to coincide exactly with the open blazed lines I found through the woods.

In making the survey I first of all established the outside limits of the ranges and streets and then I established the corners of the blocks by intersections, that is by putting in hubs and tacks with the instrument on the north side of all the streets astraddle of the north and south lines and then ranging them in again by setting the instrument on these same north and south lines. Thus establishing the points for the iron bars, I then put in the wooden posts for the corners of the lots.

I have opened up through the woods both sides of all the streets, the east and west sides of the avenues fronting on the ranges which have been divided into lots, also the centre lines of these ranges.

I got the astronomical bearing from the western elongation of Polaris, the particulars of which will be found in my field book. My instrument is not fine enough for taking sun observations, besides I lost my dark glass.

I mailed to you yesterday the map I made of Gimli.

I have the honour to be, Sir,

Your obedient servant,

HENRY LAWE, *D.L.S.*

## No. 10.

## REPORT OF J. E. WOODS, D.L.S.

## SURVEYS IN MANITOBA.

OTTAWA, 11th February, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit to you the following report on the surveys I performed in the Province of Manitoba, under your instructions of the 20th May, 1898.

I left Ottawa on the 21st of May and proceeded to Glen Ella, where I had left my last year's outfit; on my way through Winnipeg, I met the parties appointed on my staff, hired three axemen and a cook, and purchased my supplies.

From Glen Ella I followed a fair trail, mostly over gravel ridges, to township 22, range 14, west of the principal meridian. The work in this township consisted of the renewal of the original survey marks placed by W. Case Eaton, D.L.S., in 1875. In the bush the old lines were completely overgrown, and had to be reopened; in the brûlés, new lines were traced as all the old marks had disappeared. The original survey having been made with great care and precision, I always found at least the remains of the old posts, or one of the two bearing trees which had been marked near each post; of course some time was now and then lost in finding sufficient evidence to determine at which point the original post stood, but I never experienced much difficulty. Most of them had been planted in the frozen earth, and had fallen down, so that in only a few cases did I find the point of the old post in the ground, as is usually the case, even long after the top has been burnt or rotted away. Had this township been left a few years more without being reposted, the old posts and bearing trees would have been completely destroyed by the numerous fires that always overrun a new settlement.

Only three settlers had taken up land, but not knowing which quarter section they were improving, they had not made entries at the land office. A large number of homesteads were expected to be taken up during the summer, as the township presents many advantages. There is a large settlement a few miles north, through which there is a good trail to Ste. Rose du Lac, nine miles distant. Here, there is a post office, two stores and a Roman Catholic church. Laurier station on the Lake Manitoba Railway is about six miles to the west. The settlers were to cut a direct winter road to the railway and gradually improve it to a summer road. At the time of the original survey this township was all covered with large poplar and spruce, but periodic fires have made large openings, now covered with willow and poplar scrub; there is also considerable brûlé and windfall. A few belts of green poplar have escaped destruction, where they were protected from fire by the lakes or large muskegs. The spruce on the north and east sides of Beaver Dam Lake is being cut into building lumber at the steam mill on section 11. Hay land is rather scarce, the swamp lands are mostly floating bogs covered with short grass. The pasture is good in the brûlés and on the ridges in the eastern part of the township. Good water is to be had in the lakes in the southern part, and almost anywhere by digging five or six feet. There is a good trail northerly over an open gravel ridge, through sections 1, 12, 13, 24, 25 and 36; it is part of the old trail from Gladstone to Dauphin Lake. The high bank between Beaver Dam Lake and the surrounding low land has been formed by the combined action of wind and ice, and not by beavers as the name of the lake implies.

During the month of June and the beginning of July, the rainfall was excessive, the ground became saturated and in erecting mounds the pits filled with water before they were half excavated. Moving camp became an arduous task, even on high land,

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and in the bush the horses and carts were mired. The first and second weeks of July were very warm, the thermometer reaching 96° in the shade. The heat had at least the good effect of somewhat drying the surface of the ground.

The horse flies, known as "bull dogs," made their appearance about the 10th of June and lasted five weeks. They were especially harassing on sandy soil and around spruce swamps. At first smudges were sufficient to keep the horses quiet, but later on a log stable had to be built at each camp. The stables were 18 feet long, 12 feet wide and 7 feet high; the logs were notched to keep them firmly in place; the roof was made of poles and was covered, as well as the sides, with brush or spruce boughs; a large entrance was left, preferably on the north side, and a cart cover for a door completed the building. The flies are most vicious when the sun is bright and when the weather is hot; they disappear at sundown. Few are out in cloudy weather and they never enter a cool or shady place. In the morning, as soon as the first rays of the sun peeped over the horizon, they attacked the horses and drove them into the stable. All day long they would buzz around in thousands, like a swarm of bees, without entering the cool shade. Pressed by hunger or thirst, a horse would sometimes venture out for a minute, to be driven back as if struck by the lash of a whip. The only protection we could give our horses when moving camp was to rub them with linseed oil containing a few drops of carbolic acid and as long as the application lasted they were safe enough from the flies, but between the water, mud, brush and sweat, many spots became devoid of protection and were at once covered with flies; blood soon trickled in large drops and the poor brutes threw themselves to the ground and tried to roll in harness. People passing through this district generally travel at night; in the daytime they protect their horses with large covers made of flour sacks, reaching from head to tail, and as low as the knees.

I completed the reposting of township 22, range 14, on the 16th of July, and left on Monday the 18th for township 24, range 8, on the east side of Lake Manitoba. The recent rains had rendered the trail from Ste. Rose du Lac so soft, that we travelled only at the rate of 10 miles a day to the Ebb and Flow Indian reserve. Here, I was strongly advised by the Hudson Bay Co.'s trader not to attempt to pass by the narrows of Lake Manitoba. The high water had rendered the roads impassable for loads, the ferry was disabled, and the only way of crossing was in canoes. Although I was only 40 miles from my work, I had to turn south and travel 180 miles around the lake. At Manitoba House I kept only what supplies I required for the journey and shipped the balance by sail boat to Scotch Bay; with light carts and good roads I was able to travel rapidly around the lake. I reloaded part of my goods at Scotch Bay, which point I made my base of supplies, and went on north. From the information I received at the Souseuse Indian reserve, I thought it wise to hire a guide to take us across the swamps at the north end of Dog Lake. We followed the Fairford colonization road to a point about five miles north of the lake, and then turned south-east over a disused hunter's trail, passing along the edge of muskegs, across swamps and through belts of timber, till we reached our destination, the north-east point of Dog Lake, on the 2nd of August.

I retraced the north boundary of township 28, range 8, which had been surveyed in 1873; the line was covered with willows and small poplar, all the posts were found, some of them still standing and well preserved. I continued the sub-division of this township till the 18th of August, when I went to the west side of Dog Lake to complete township 28, range 9, which had been partly surveyed a few years ago, also a part of range 8 along the shore of the lake. The country is undulating and contains many marshes and muskegs of large extent. The ridges have been repeatedly overrun by fires, which have left large openings now covered with small poplar and willows, belts of brulé and windfall cover the land along the shore of Dog Lake. The soil is clay loam very stony in places, horizontal beds of limestone come to the surface on the north boundary of section 35. After completing this work I returned to the east side of the lake with a load of supplies to continue the sub-division of township 28, range 8.

There are about eleven sections of land in this township. A marsh from 10 to 30 chains wide extends along the lake, the land then rises gently to the north-east, and is mostly high and dry. It is covered with brulé and windfall of large poplar, mixed with willow and poplar scrub. Along the marshes that border the lake fires have been more



frequent, consequently the windfalls have been burnt off, and scrub has grown up. A few clumps of spruce, some groves of large poplar, ridges of oak of a good quality afford plenty of timber for all the requirements of settlers. The soil is black loam 6 to 10 inches deep with clay sub-soil. Several sections have sufficient open ground for immediate settlement, and large tracts could be prepared for cultivation with a small amount of labour.

In order to carry the east boundary of range 8 across Dog Lake, which extends about five miles further east than is sketched on the maps, I sub-divided four sections in township 24, range 7. The surface is slightly undulating and cut up by large marshes and muskegs, the high land is mostly covered with brulé and some windfall. The scrubby openings along the marshes could be easily cleared for cultivation, and a few more fires in the brulés would leave nothing but stumps and a few charred logs. The land was so wet and marshy in township 23, range 7, that at first I only traced the north boundary of the township, and sufficient lines to establish the east boundary of township 23, range 8, which I proceeded to sub-divide. It forms a large point projecting four miles into the lake, and comprises about 16 sections of land. The shores of the lake are low and swampy, the interior is good high land covered with willow and poplar scrub. On the east side there are a few belts of second growth poplar, from two to four inches in diameter. On the west side there is considerable brulé and windfall of large poplar grown up with poplar scrub; along the south boundary the timber is green and of a large size. The soil is black loam, eight inches deep, with clay sub-soil containing limestone. The telegraph line constructed about the year 1874 along the proposed line of the Canadian Pacific Railway passes through sections 8, 9, 10 and 3. A few lengths of wire are still hanging from the trees that have grown up since the right of way was cut out. Most of the wire has been picked up by hunters and Indians and serves for a variety of purposes.

When I reached the correction line with my outfit, winter had set in, there was eight inches of snow on the ground and the weather was cold. I at once began cutting out nine miles of road through heavy bush and windfall to the Fairford trail. Having brought in sufficient supplies to complete the work I had already begun I sent my horses and carts to Scotch Bay for the winter. I found it more advantageous when I had to move camp to hire a couple of ponies and sleighs at the reserve than to send for my own horses. As the road is all on high land and leads directly to the Indian hunting ground, it will be kept open and improved, and render township 23, range 8, accessible for settlers. In dry seasons the Indians have a trail on the south shore of Dog Lake, but since the high water it is impassable even with empty carts.

I returned on the 1st of December to complete the west half of township 23, range 7, it comprises about ten sections of land, of which one-half is swamp and muskeg. There is a strip of fine high land in sections 16, 21, 28 and 33, it is mostly covered with poplar, three inches in diameter; few traces are left of the heavy timber that covered it at one time. Sections 4 and 5 are open brulé with small poplar and willow scrub.

There is a fine clump of spruce on the south side of section 8, which spreads into sections 5, 6 and 7; it would afford fine building timber for settlers. The soil is a deep clay loam containing limestone. Beds of limestone come to the surface on section 5, it could be easily quarried for building purposes or for burning lime. On the eastern half of the township there seem to be timber and muskeg. I surveyed the north and south boundaries as far as the east outline, through belts of large timber separated by long narrow muskegs; it is not adapted for immediate settlement. The completion of this work on the 16th of December ended my sub-division surveys for the season. I took my party out to the Indian reserve, paid off those I did not require and made preparations for scaling Dog Lake.

During the summer the wind blew mostly from the south, it rendered the heat oppressive during the day, and even the nights were very warm for this part of the country. The mosquitoes and black flies obliged us to work with our heads wrapped up in a net, and during two months smudges for the horses were kept up day and night. The work was much delayed through the numerous large marshes crossed by the lines, the water was often waist deep, the long grass two to four feet above a man's head had

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to be tramped under water or mowed down with brush hooks. The large timber was not so much a source of delay as the thick underbrush and large willows that bordered the marshes ; one good axeman could always keep up with four men cutting out the brush and scrub with hooks. The heavy rains in the fall not only made the water rise in the marshes, but also filled every depression there was in the ground. During the month of October my men endured much hardship without a murmur, almost every morning they had to wade through water covered with a scum of ice, and often remained wet all day when the thermometer was at freezing point ; several times some of them stood up to their waist in ice water to help horses and carts out of a deep hole, at other times when the ice would not carry a horse it had to be broken to enable the horses to pull their loads through marshes that were knee deep. Moving camp always required the help of the whole party, there were roads to cut, marshes to cross that required the united strength of horses and men, and driving five carts and a buckboard on the roads we passed over was more than two or three men could do.

The advent of the cold weather was welcomed by every one ; on the 10th of November the marshes were sufficiently frozen to permit of crossing them by carefully picking our steps, there was no frost where the snow had drifted up in the grass. I was able to perform daily more than double the amount of work I had been doing before winter set in ; the weather was remarkably fine, and the cold only sufficient to stimulate the men, who worked with life and energy, the frozen brush broke off at the slightest blow of a brush hook, and the absence of leaves necessitated less cutting. We were able to walk from camp directly to work and back again over marshes we would avoid in summer. Altogether the cold weather brought a feeling of comfort we had not experienced during the summer. The mounding presented no difficulties, one man equipped with a spade, a pick and an axe to cut the frozen earth, could easily make two mounds a day. Although knee deep the snow did not interfere with the work, it was very light, and once tramped down it made good smooth paths over which we travelled with ease.

I left the Indian reserves on the 19th December to scale the shores of Dog Lake in townships 24, ranges 7, 8 and 9, and in townships 23, ranges 7 and 8. We moved camp almost every day, two horses and sleighs drew my supplies and outfit, which I had greatly reduced. I found a dog and sleigh very useful to draw pickets, axes and brush-hooks, which were used in the production of several lines that had been left on account of the deep marshes they crossed. Having provided the party with snow-shoes, we travelled with ease over the deep snow drifts along the lake shores. In the bush they were of no use as the snow was too light, in the marshes they enabled us to rapidly open up a line through the long grass by tramping it down. I kept the horses in a tent and fed them with hay ; I previously had a load of hay distributed at different points along the lake, as I could not get sufficient grain. Dog Lake is twelve miles long in a northerly direction and nearly as many wide, with a large point projecting three or four miles into the lake from the south side ; it is dotted with several low marshy islands fringed with elm, oak and willows, growing on a sand bank three or four feet wide. In summer they are the abode of immense flocks of ducks, gulls and wild geese. Pelicans frequent one small rocky island on which they hatch ; the Indians are very careful not to disturb them till the young ones show signs of soon being able to fly, then they surround the island and slaughter them with clubs for the oil they render in large quantities ; it smells strongly of fish and is used for cooking purposes.

Along the shallow shores the ice adheres to the sand, gravel and boulders at the bottom, and when shored up by expansion in the winter or by heavy gales when breaking up in the spring, the ice deposits all this material on a bank which is over four feet high in places and as many wide ; it forms a well defined shore all around the lake. Inside of the bank is a marsh extending from a few chains in width to over a mile at certain points. During a storm the waves break over the bank in many places and fill the marshes, so that at times they are two feet above the level of the lake. The high land forms the shore of the lake in a few places and then only for a short distance. The water is clear and of a greenish tint, although hard, it is pleasant to the taste ; at one chain from shore it has a depth of about a foot and a half, whilst in the deepest parts it is reported to be fifteen feet. It is well stocked with pike and pickerel, but no white

fish comes up into it from Lake Manitoba. Little Dog Creek, about forty feet wide, enters the lake on section 32, township 23, range 7; it drains Little Dog Lake twelve miles to the south-east and a number of large muskegs. The water is of a dark-brown colour, and can be seen extending a long distance from shore before mixing with the clear lake water. Middle Creek is twenty-five feet wide and three feet deep, it drains the muskegs to the north-east, and spreads out into a large marsh on section 18, township 24, range 7, before reaching the lake. Moose, deer, and bear are numerous through the country drained by these creeks, although they are hunted every year by the Indians, who also trap rats, mink, fisher and other fur-bearing animals. The lake is subject to periodic rises and falls of about three feet, the same as Lake Manitoba. High water is not directly influenced by the snowfall or rainfall, as the lake has been known to rise during years of drought, and to fall during wet seasons as I observed it this year.

By excavating about twenty chains along Dog Creek, which drains Dog Lake into Lake Manitoba, the recurrence of high water would be prevented and large tracts of flooded hay land would be reclaimed.

The principal difficulties in settling this part of the country, as well as the district around the narrows, are its great distance from the railway and the bad state of the roads, also the liability of the hay land to floods. As there are no prospects of a railway being built along the east side of Lake Manitoba, colonization might be much facilitated by a steamer making weekly trips from Westbourne to Fairford and calling at different points along the lake, from which roads could be made into the interior. If settlers had a guarantee from the Government that such a service would be kept in operation till better means of communication could be had, a large number would take up land in this district, and many who abandoned their places a few years ago would gladly return, especially in view of the proposed lowering of Lake Manitoba, by a supplementary outlet at Fairford. Although it is doubtful whether such an undertaking would pay the first year or two, the deficit the Government would be called upon to make good would be very small compared with the advantages the colonization of this district would receive from a steamboat service on Lake Manitoba. The principal articles of export would be pressed hay, fresh fish and cattle, a large amount of grain would also be shipped before many years.

Up to the 31st December the weather was fine and calm, and the traverse of Dog Lake consequently progressed rapidly, but during the following twelve days the mercury was frozen nearly every morning, from outside reports the thermometer dropped as low as 48° below zero. The weather also got stormy, and for several days the snow drifted so much on the lake that it was impossible to work. During the cold spell we were quite comfortable in the tent, but suffered from the piercing wind that blew constantly on the lake.

I completed the survey on the 12th of January, and reached Winnipeg on Saturday the 14th. I paid my men off on Monday, and continued my journey to Ottawa where I reported at the office on the 21st.

I have the honour to be, Sir,

Your obedient servant,

J. E. WOODS, D.L.S

# Department of the Interior.

No. 11.

## REPORT OF JAMES DICKSON, D.L.S.

### SURVEYS IN DAUPHIN LAKE DISTRICT.

FENELON FALLS, ONT., 26th December, 1898.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to report that in compliance with your instructions of the 21st of May last, informing me I had been appointed by the Hon. the Minister of the Interior to subdivide certain townships in the Dauphin district, Manitoba, I left home on Monday, the 30th of May, and arrived at Winnipeg the following Friday evening, the 3rd of June. The next day G. H. G. Boulton, my assistant from Ottawa, and David Beatty, of Sarnia, reported to me. On Monday morning, the 6th of June, I engaged another man, and left for the town of Dauphin, engaging one more man at Portage la Prairie.

Next day I got the four horses which had been wintered at Dauphin from last season, purchased one other, engaged a sufficient number of men to complete the party, loaded waggons and got everything ready for a start to camp.

I left Dauphin on the morning of Wednesday, the 8th of June, and the following evening arrived at the south-east angle of section 6, of township 26, range 15, west of the principal meridian.

Next morning, Friday, the 10th of June, I commenced work by retracing and measuring the west boundary of the township across sections 6 and 7, and measured the angle contained between the west and south boundaries, opened out and ran a picket line along the south boundary to camp and started the east boundary of section 6. I ran the west meridian of the township to within one-half mile of the north boundary, then moved camp to that point, and from there ran the north boundary. After completing this line I moved my camp back to the south boundary and proceeded with the subdivision of the township, finishing it on Tuesday, the 26th of July.

Next morning I started for township 27, range 16. I found a waggon trail as far as the south-east angle of section 31, township 26, range 16, and arrived at that point a little before dark of the same day. I camped there until the following Monday, the 1st of August, and ran one and three-fourths miles of the south boundary of township 27, which is a correction line, and also cut out a waggon trail. I then moved to the east side of a slough near the south-west corner of section 8 and ran the remainder of the south boundary of the township, finishing it on Wednesday, the 3rd. This township was at one time covered with large timber. A number of years ago it was burned over and the timber all killed, subsequently a wind storm blew everything down, making a solid mass of logs and brush with a dense new growth springing up.

Before moving my camp to the boundary I had a waggon trail cut about three-fourths of a mile into the township. This trail I now produced, but so dense was the mass we had to cut our way through, that although working at it with the whole party, it was not until Friday, the 12th, that I succeeded in getting my camp to the north-west corner of the township. Next morning I commenced work on the north boundary and completed it the following Wednesday. I found the land so inferior on both the south and north boundaries of this township, and also along the newly made trail that I sent my assistant to examine the interior of the township. The report he submitted was of such a nature that I concluded it would be simply wasting time to subdivide the land as it was not suitable for either ranching or agriculture. While camped here

I also ran the north boundary of township 27, range 17, and part of the east meridian. Here again I had two days road-making before I could move my camp west. But on Thursday, the 25th, I had everything up to the west side of section 2, township 28, range 17, and on Saturday, the 27th, finished the survey of township 27.

On the following Monday I continued the trail which I had started to cut north across township 28, and on Wednesday reached the north boundary, a little east of the centre of section 34. Next day, 1st September, I moved camp to this point, where I remained until I had done as much work as could be conveniently reached in townships 28 and 29. On Saturday, the 17th, I moved south again on the trail into section 22, township 28, from which camp I completed the east part of the township. On Wednesday, the 28th, I started with my camp for the north-east angle of section 32. It took one and one-half days to make a road and get moved to that point. From this I completed the survey of township 28, and also ran the two westerly meridians of township 29, two miles north, and on the 12th of October, after two more days road-making moved to the north-east angle of section 8, township 29, and on Friday, the 21st, moved to the south-east corner of section 29, from whence I ran the east boundary of section 29, also part of 32, and the north boundary of section 21. Here I was reluctantly compelled to close operations for the season.

The country is very low and wet, getting continually worse as we proceeded northwards. The sloughs are nearly all alkali and were full of water. During the whole of October there was from four to six inches of snow on the ground. The sloughs were all frozen over but the ice was not sufficiently strong to carry. All hands were wet to the knees every day from morning till night. The horses could seldom get any food except browse in the woods. This was the cause of considerable trouble as they wandered a great deal and used up nearly all the hobbles.

On the projected plan of this township there is a trail shown crossing the west boundary, by which I had hoped to reach Lake Winnipegosis, but on sending a man out to locate it, I found there had never been a trail in that locality. I then sent two men west along the north outline of the township and instructed them to follow the north outline of the township to the west of us, which I found had been surveyed this season, to ascertain if there was a waggon road leading toward the north.

They found one five and one-quarter miles west of our camp. On Monday, the 24th, I commenced making a trail to the west and by Thursday evening had it completed to the waggon trail, and the camp moved to within one mile of that point.

On Saturday evening we arrived at Winnipegosis village. The horses were nearly played out and their legs badly cut by the thin sharp ice on the sloughs. I had them stabled here and well fed till Monday morning and reached the town of Dauphin on Tuesday evening. Next day I paid off my party and disposed of my outfit for the winter and arrived home the following Tuesday, the 8th November.

I have the honour to be, Sir,

Your obedient servant,

JAMES DICKSON, D.L.S.

# Department of the Interior.

No. 12.

REPORT OF A. F. MARTIN, D.L.S.

SURVEYS IN DAUPHIN LAKE DISTRICT.

DAUPHIN, 2nd January, 1899.

E. DEVILLE, ESQ.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to forward you the following report of my field operations up to the 31st of December, 1898.

I received my instructions at Ottawa on the 16th of May last, and left immediately for Toronto where I had my transits put in proper repair.

Owing to some misunderstanding in the organization of the party, or rather in the selection of the men, I did not leave Winnipeg until the 27th of May for Dauphin where I completed my outfit. Of the three horses I had given out to winter, one died in the spring, and one of the waggons had been taken to Swan River by the land agent of that place. I was, therefore, obliged to purchase four horses and one new wagon. It was the 6th of June when we started from Winnipegosis to begin our field operations in township 30, range 18. The land in this township consists of large hay swamps and numerous muskegs, with stony ridges intervening. I thought it was better to begin work here, because I feared that should the fall of the year be wet, we would not be able to survey this country; my provisions proved to be correct, for had we waited till fall to subdivide these lands, the heavy rains which prevailed in October and November would have made it impossible for us to get through. It was bad enough in June, but the water was warm, and the men did not mind getting wet up to the waist every day.

This township, with the exception of a few quarter sections adjoining the north boundary, I consider only good for ranching. The same may be said of township 29, range 18. Dauphin Lake covers parts of sections 1, 2, 3 and 4 in this township. Along the lake splendid hay lands can be found. A large muskeg, or rather an immense bog measuring about three and one-half miles by one mile wide, runs parallel and at a short distance from Dauphin Lake. The wood in townships 29 and 30, range 18, consists of poplar and a few bluffs of spruce. Thick and heavy clumps of willows cover the swamps and muskegs.

The work throughout was therefore heavy. It was only on the 2nd August that we were ready to leave township 29, range 18; glad to get away from this unpleasant country. To say that the flies were most terribly bad, is to use a mild expression. They were so bad that it was necessary to keep smudges, day and night, for the horses; who would not venture away and had to be fed at them.

We moved into township 29, range 19, on the 3rd of August, and began subdividing on the following day. Fork River, a well defined stream with high banks, runs through this township. Here at last we enjoyed the privileges of camping on dry land and of drinking clear and good water. The land on each side of the Fork River, for a distance of about one mile, is very good. There are several farmers settled on these lands, and they all express themselves as highly satisfied.

Fishing River runs through the southern tiers of this township, its water is also clear and good. We found several settlers on the bank of this river, some of them belonging to the Galician colony. They have fine buildings and are doing well. They are clearing up land with a will worthy of a Canadian farmer.

The Lake Manitoba Railway and Canal Co.'s line crosses township 29, range 19. The station is on section 26. The land throughout is very scrubby and between the two rivers is well wooded with poplar. We left this township on the 14th of September to go into township 26, range 19, where by the 4th of October we had renewed nearly sixty miles of corners which had been destroyed by fire.

We were able to find all the corners as marked by the previous survey. The country lying south of the Valley River is comparatively open, but on the north side, the land is very scrubby and well wooded with poplar.

I am told that there is not one quarter section vacant for homestead entry in this township. Judging from the fine wheat fields and the comfortable dwellings to be seen, one would naturally think that these lands have been settled upon for a number of years, and yet it is scarcely ten years ago that people began to cultivate them in earnest.

On the 1st and 2nd days of October a hurricane most disastrous to the farmers passed over the province. The heavy rains which fell during these two days made the roads almost impassable.

We left Valley River on the 4th of October, and it took us three days to reach township 23, range 19. We were only able to travel six miles a day. From the 1st of October to the 2nd of November it rained and snowed nearly every day. On the 20th of October there was one foot of snow at the foot of the Riding mountains and 18 inches on the summit. The weather kept mild, however, and the snow began to melt, turning swamps and muskegs into lakes. The streams were carrying water with full banks. Numerous stacks of hay, which had been set on dry lands were now standing in two feet of water. The whole country had the appearance of spring.

Most of the streams running from the mountain are what are commonly called blind creeks, and spread their waters which run down with a rush from the slopes over the flats.

We continued our work slowly, wishing for frost to set in, but the weather kept mild and we were obliged to plough through half melted snow and water knee deep. As a consequence we made slow progress. On the 17th of November we had surveyed only twenty-seven miles including five miles of renewal of old lines. Our horses were one week without a bite of hay, it being impossible to carry it to them, and were failing fast.

Seeing that we could not make satisfactory progress before frost would set in, I decided on the 18th of November to move to townships 24 and 25, range 24, instructions for the subdivision of part of these two townships having been forwarded to me.

After reaching township 24, range 25, I felt sorry indeed that we had not come to it a month sooner. From the 21st of November to the 26th of December we surveyed fifty-seven miles, viz.: the south boundary of township 23, range 24, the two eastern tiers of sections in townships 24 and 25 and four miles in township 24, range 24, and this during the shortest days of the season and through scrubby lands. This part of the country is situated in the gap between the Riding and Duck mountains, and forms the extreme west end of the Gilbert plains. The land is high and well drained by numerous streams, and though on the very height of land, the soil is of remarkably good quality. There is abundance of wood and timber and great quantities of hay and good water are to be found anywhere.

In township 25, range 24, we found six settlers, some of them have been residing there for seven years. They are well to do people. They report that part of the country free from frost.

I think it would be advisable to have the balance of township 24, range 25, surveyed as soon as possible and also township 23, range 25, and township 26, range 24.

The weather since the 15th of November has been exceedingly fine. We returned to township 23, range 18, on the 29th of December, and we are now occupied in subdividing the north half of the township. There are a few squatters in it. In conclusion, I may state that during the season we have surveyed two hundred and forty miles, fifty-two miles of which were renewals of the marks of previous surveys.

During the first week of my operations, I contracted a severe illness through camping on damp ground and drinking bad water, which has clung to me ever

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since. In spite of my doctor's advice to give up work for one month, I stuck to it, as well as I could and had it not been for the services of my assistant I could not have continued the work. In coming out of the Riding mountains one of my men (Pangman) met with a serious accident. In driving a team across a stream, he fell from the top of the waggon to the horses' feet, striking his back on the pole of the waggon, the horses took fright and he was dragged a short distance. He was so badly hurt that he had to be carried. I sent him to Dauphin at once and put him under the care of a doctor.

I have the honour to be, Sir,

Your obedient servant,

A. F. MARTIN, D.L.S.



## No. 13.

## REPORT OF P. R. A. BELANGER, D.L.S.

## SURVEYS IN SWAN RIVER DISTRICT, MANITOBA.

OTTAWA, 22nd February, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following report on my survey of township outlines east of Duck Mountain, and subdivision work near Favel River, made during the last season.

In accordance with your instructions dated the 20th May, 1898, and delivered to me on the 21st, I left home that evening for Yorkton, stopping at Winnipeg to buy supplies, and complete my outfit and party.

On the morning of the 29th May, I reached Yorkton; but the bulk of my supplies did not arrive until the first June. While here, I was joined by D.L.S. Bourget, who had been appointed to my party as assistant.

On the 3rd of June, I left Yorkton for my initial point, the north-east corner of township 36, range 25, west of the principal meridian, where I arrived on the 9th.

Here, after having spent one day in training the chainmen and mounders in their duties, I proceeded with the survey of the 10th base line across range 24, without much trouble, though the country was very wet in the eastern part; but in entering range 23, I found the country was becoming so very low, wet, and thickly covered with tamarack, and entirely deprived of feed for horses, that after a vain attempt to move camp forward over that wet ground, I decided to postpone the survey of this line till winter when the muskegs would be frozen and transport through this country would be practicable by means of sledges drawn by men or dogs.

I next proceeded to the north-east corner of township 32, range 20, to produce the 9th base line westward. In order to shorten my way to this work I ran the east boundary of township 36, range 25, with the hope of getting out to the colonization road by this line, but I failed to strike it; however, this work was not useless, as it was required later on in the season for the subdivision of this township.

On the way to the 9th base, via the colonization road from Favel River to Dauphin, I made another stop to rest my horses, and during the stay, I ran the east boundary of township 30, range 22.

I also tried to force my way across range 22, to run the east boundary of township 30, range 23, but I broke one of my waggons in the attempt, and decided to leave that line till later on in the season. I then resumed my journey via Fork River, Mossy River, Winnipegosis and Pine River roads, and reached my second initial point on the 11th July.

From here I produced the 9th base line westward across ranges 20, 21 and 22, and ran the meridians therefrom, which were mentioned in my instructions, as far as it was possible at that time of the year over a wet country. The descriptions of these lines will be found further on.

On the 3rd October, in compliance with new instructions received a few days before, I dropped the outline work and proceeded with the subdivision of townships, 36, ranges 24 and 25, and township 35, range 26. I started for this new field of operations via the colonization road, and reached it only late in the evening of the 7th. This new journey was undertaken under very unfavourable circumstances, after the heavy snow storm which raged all over the country on the 1st October. The roads were so

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obstructed by deep snow, fallen trees and large willows bent over by the force of the wind and the weight of snow, that for part of the way we had to reopen the road. The remainder had been opened a few hours before I came along, but was no better. We had to travel through deep slush and mud, which would not permit of travelling more than nine miles a day. This caused much delay, and it was not till the 7th that I reached the field of operations at Favel River.

Here, I subdivided the whole of township 36, range 24, and completed township 36, range 25. I also sub-divided the east half of township 35, range 26, as far as the foot of Duck mountain, but could not survey the southern tiers of sections to complete the subdivision of this township, owing to the season being too far advanced to allow me to spend three to four weeks in running the necessary outlines for the establishment of the 9th correction line, which the completion of this subdivision would have involved.

A few days before finishing my subdivision work I disposed of my summer transport outfit by sending the whole to Mr. Wm. Reekie, of Mulock, Assa., for the winter with the exception of one horse, which had gone astray in September near Fork River, and was found by a Half-breed trapper, who brought it to Dauphin for me at the end of January.

This horse was left in care of Mr. Hugh Fulton, of Dauphin.

To replace my summer transport I had seven sledges (jumpers) made by a member of my party; these were made about six feet long, with runners nine inches high, and from one to one and a quarter inches in thickness. Underneath these were fixed strips of hardwood, six inches wide and half an inch thick, to prevent their sinking in the snow. The runners were joined together at an inch and a half from the top by bars of hardwood, three-quarters of an inch thick and twenty inches long, placed about six inches apart.

This made a strong serviceable sledge, and proved to be the best conveyance for winter work, provided supplies can be secured within a reasonable distance, as otherwise it would be too fatiguing for men to draw.

On the 20th of December, I resumed the outline work I had postponed in the spring. I extended the 10th base line across ranges 23 and 22, and closed the meridian exterior of these two ranges between the 9th and 10th base lines, throwing on the 9th correction line all the discrepancy existing between the surveys carried northerly from Dauphin and those extended southerly from Swan River.

I must say that the closing errors found here, both on meridians and the jog, were so great, being over 24 chains too short on meridians, and ten chains too long on the jog, that I did not close my work before making verifications. I verified the azimuth of my lines and the chaining of the base line across ranges 23 and 22, as well as the east boundary of townships 36 and 35, range 23, and found the whole correct. The measurement on the east boundary of range 22 being about the same as range 23, I soon made up my mind that this large error had been carried from the south for a long distance, probably from the 6th or 7th base lines, as all the outlining and subdivision performed by me in the Dauphin district, from the seventh correction line to the ninth base line, had closed very near the theoretical lengths.

As to the excess in the jog, it is probably due to an error in the position of the Manitoba boundary, on which all the surveys of the Swan River Valley were based. It could not be elsewhere, as all the chaining has been verified by the subdivision of townships in ranges 24, 25, 26, 27, 28 and 29.

Having given an account of my operations during the course of the season's work I will now give a description of the country covered by these surveys.

### 10TH BASE LINE.

Range 24.—Sections 31, 32, 33, 34 and part of 35 of this range have been burnt, but are still more or less covered with willow and poplar scrub, together with scattered large poplar on sections 33 and 34.

Sections 35 and 36 are more heavily timbered, being covered with poplar from 4 to 15 inches in diameter.

The soil is very good, but the country, with the exception of section 31, is generally low and much broken by swamps and muskegs, principally on section 36.

Sinclair river crosses the east half of section 35 in a north-westerly direction; it is a small stream about 30 links wide and 18 inches deep, with good water and sandy bottom. Small tributaries of this river are also crossed on sections 31 and 33.

Range 23.—The whole of this range is covered by an immense tamarack muskeg, which is only broken by two small ridges on sections 31 and 33. The timber is very scrubby and unfit for anything else than firewood and fence rails.

As to the land, it is too wet to be of any use, in fact, it is nothing but an immense floating bog.

Range 22.—In entering this range the country rises a little, and strips of dry land alternate with tamarack muskegs, but the land is poor.

The soil, where dry, on hills is generally quick sand, and covered with a second growth of jackpine, varying from six to twelve feet in height.

Here, again, the timber amounts to nothing worth mentioning.

#### 9TH BASE LINE.

Range 20.—Running westward across range 20, the 9th base crosses a gently rolling, burnt country, overgrown with scrub and interspersed with bluffs of poplar and spruce, and much broken by willow and tamarack swamps. Point creek and another small creek are intersected on section 34. Another small tributary of Point creek is also crossed on section 33.

The soil is rated 2nd and 3rd class.

Range 21.—Section 36 and the east half of section 35 is high and dry open land, and the soil is very good.

The remainder is generally a rolling burnt country, occasionally broken alternately by swamps and hills. The latter are somewhat stony, but the soil is fair.

Pine River crosses the east half of section 36 in a northerly direction. It is a stream 50 links wide by three feet deep, with slow current.

Another small creek empties its waters into Pine River, and also runs across the west half of this section.

Pine River trail is intersected near the centre of section 36.

Creeks with good water are also found on sections 34 and 33. They rise in a large tamarack swamp, lying south-west of the line, which takes its waters from streams draining Duck mountain.

The soil ranks 2nd and 3rd class.

Range 22.—Is generally a low country, though partly dry. Section 36 is a tamarack and spruce swamp. The remainder of the range is partly covered with large willow and spruce bluffs, and partly with poplar and spruce bush.

A creek with a fine belt of hay is crossed in the east half of section 33. The Canadian Northern Railway, and the colonization road from Dauphin to Swan River, were both intersected on section 32. The former was built only last summer, but the latter was opened in the fall of 1897. The railway runs near the foot of Duck mountain, along a narrow gravel ridge which extends north and south for many miles, and the formation is attributed by geologists to the action of the waves of the old Lake Agassiz.

The colonization road also follows for a long distance a similar ridge lying about half a mile west of the first one. This latter ridge forms practically the foothill of Duck mountain, and rises to a great height at its north end.

The description of the 9th base above given only applies to the country in its immediate neighbourhood, and would be quite different in some places if applied to the country lying half a mile north or south of the line, where large tamarack muskegs are met with.

#### MERIDIAN EXTENSIONS.

Township 30, range 23.—The east boundary of this township is over a rolling country forming part of Duck mountain. Section 1, the south half of section 12, and

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the whole of sections 25 and 36 have been cleared by fire. The remainder is heavily timbered with large poplar, birch, spruce and thick hazel and willow bush.

Numerous streams run across this line in a north-easterly direction, the most important being Fork river on section 1, and Pine river on section 36, on which timber can be floated down to the railway track.

The soil ranks 2nd and 3rd class.

Township 31, range 23.—As seen on the east boundary is all burnt, with the exception of section 36, which is heavily timbered with spruce and poplar. It is also a rolling country forming part of Duck mountain. Small tributaries of Pine river are found on every section.

The land is rated 2nd class.

Township 32, range 23.—The country crossed by the east boundary of this range is all heavily timbered with spruce, tamarack and poplar, partly good for lumbering purposes. It is watered by numerous creeks, the largest being on section 13.

The land is gently rolling, and forms part of the foot hills of Duck mountain.

The soil ranks 1st and 2nd class.

Township 33, range 23.—Running northerly the first  $3\frac{1}{2}$  miles of the east boundary of this range, crosses over a rolling burnt country, also forming part of Duck mountain, and runs out of the mountain on section 24 to enter a tamarack swamp about one mile long, after which it passes through burnt spruce and tamarack, mixed with thick willow scrub. Spruce windfalls are also met with in the *brulé*.

The colonization road enters this range near the south-east corner of section 13 in a north-westerly direction.

The Canadian Northern Railway also enters it in the same direction on section 25.

The north branch of Pine river, a stream 80 links wide, and two feet deep, runs through the south half of section 1. Other creeks of small dimension are crossed on sections 13 and 25.

The soil rates 3rd class.

Township 34, range 23.—This meridian is over a slightly rolling, burnt and low country, still covered with dry spruce and tamarack, and high windfalls. The whole is badly mixed with willow scrub.

Small rivers are crossed on the south half of section 1, and near the south-east corner of section 24, running towards Lake Winnipegosis.

The land ranks 2nd and 3rd class.

Township 35, range 23.—The North Duck River runs out of this range in the middle of section 24. On each side of the river is found a small strip of good land, but on the remainder of this meridian the land is poor, being too wet or too dry, sandy and stony, to be suitable for agricultural purposes. However, a short distance west of the meridian is found a long strip of hay land, extending north and south, which will prove of some use for stock-raising.

“Cowan” station of the Canadian Northern Railway, lies, as far as I could judge, very near the meridian dividing the north halves of sections 23 and 24 at the crossing of the railway over the North Duck River.

The old Canadian Pacific Railway line of location is also intersected at the same crossing.

Township 36, range 23.—This meridian across sections 36 and 25, and the north half of section 24, runs over a scrubby tamarack muskeg, interspersed with strips of dry land, covered with scrubby jackpine, six feet high. The south half of section 24 is covered by a lake about six feet deep, and extending east for ten chains, and west for about seventy chains. The remainder of this township is partly rolling and partly level, burnt country, covered with tamarack and spruce muskegs, alternating with *brulés* overgrown with scrubby jackpine and willow.

The land rates 3rd and 4th class, and is considered unfit for settlement.

The timber is hardly good for fencing or firewood.

Township 36, range 22.—The whole of this meridian runs over a scrubby tamarack swamp, entirely unfit for anything. The timber is very small and useless, except for firewood and fence rails.

Township 35, range 22.—Is much the same as township 36 for sections 36, 35, 24 and 1.

North Duck River runs easterly across the south half of section 13, and for about half a mile on each side of the river the land is dry and good enough, but is covered with large dry tamarack, with willow and poplar scrub. The timber consists of spruce and tamarack, and is generally very small except on the south half of section 12, where some spruce and tamarack is found suitable for building purposes.

Township 34, range 22.—Is also a low country covered with spruce and tamarack, of which half has been fire-killed. It is greatly broken by large muskegs, mostly covered with tamarack and black spruce.

A small stream, supposed to be South Duck River, is intersected in north half of section 25, running easterly. Another small stream is also crossed in the jog on the north boundary of this township.

The land is rated 3rd and 4th class.

Township 33, range 22.—As seen on the east boundary, is nothing but an immense spruce and tamarack muskeg, only broken by a small ridge in the north half of section 24.

All the streams, as well as the north branch of Pine river, crossed on the west boundary of this township, here spread over this muskeg, covering all of sections 12 and 13, and the greater part of sections 1 and 24, forming a wide stretch of running water, in which their channels are lost with the exception of one, probably Pine river, intersected in the north half of section 13.

The timber is very poor and scrubby.

As to the soil, it is mostly all submerged, and cannot be classified, as the subsoil could not be seen.

Township 32, range 22.—With the exception of a few chains of dry land near the 9th base, this township is like township 33, nothing but an immense floating bog, over which all the creeks and rivers crossed on the west boundary, form one vast extent of running water covering the whole length of the line. This muskeg is also covered with scrubby tamarack and spruce bluffs, with much willow and alder. This land can hardly be drained and consequently is unfit for anything.

Township 31, range 22.—Section 1 and the greatest part of section 36 are covered by tamarack muskegs, but the remainder of the line is over a rolling country, partly covered with dry and green spruce, jackpine, and scattered poplar.

The land is generally poor, and is rated 3rd class, with the exception of section 12 which ranks 1st class.

Pine river crosses easterly on section 12, and runs in that direction for about three miles across range 21, after which it takes a bend to the north.

Township 30, range 22.—The east boundary of this township is also very low and wet, dry land can only be found on the south half of section 1, and about fifty chains long on sections 25 and 36, besides the ten chains of gravel ridge over which the Canadian Northern Railway runs across section 13.

The north branch of Fork river runs from the west across the centre of the township, till it meets the gravel ridge above described, where it turns south-easterly, forms a lake, and then a reed muskeg, which extends over section 12 and part of sections 1 and 13, and over which it spreads its water and carries them south-easterly for about 1½ mile past the line, whence it forms again into one stream before joining the south branch.

The general character of the country in this township cannot be judged by the above description, as at some distance in the interior a large tract of good land is found, on the west side of the colonization road which runs parallel to the railway.

This township may also be called the "fruit garden" of the west, as all kinds of berries are to be found here, and even plums, which I found in different places along Fork River. I was told by a workingman on the railway, that the right of way of that road was cut for a mile in length, near Fork River, through dense plum trees.

Township 32, range 21.—The east boundary of this township is through a burnt, scrubby country, slightly rolling or level. The land is rated 1st and 2nd class, with the exception of section 1, and the south half of section 12, which are covered by a

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large tamarack muskeg, over which Pine river loses part of its waters, and from which Point Creek springs.

### SUBDIVISION.

Township 35, range 26.—The part subdivided in this township comprises the east half from its north boundary southerly to the fourth mile.

As aforesaid, the completion of this township would have necessitated the running of the 9th base, and the projection of the meridian from it, in order to establish the 9th correction line. This I could not do, owing to the season being too far advanced.

The part left unsurveyed is in the foot hills of Duck Mountain.

The country is generally rolling, much opened, and well watered by the west branch of Favel River, its small tributaries, and by the east branch of the same river, which encroaches on section 36.

The soil rates 1st and 2nd class.

Minitonas hill occupies part of sections 26, 27, 34 and 35.

Township 36, range 25.—The part subdivided this year in this township, comprises the east half, together with the two southern tiers of sections left from the west half surveyed in 1897.

The country is generally rolling, burnt, and partly overgrown with willow and poplar scrub, and broken by hay, willow and tamarack swamps. It is also occasionally interspersed with bluffs of large poplar and spruce on the south tier of sections, which is partly covered by Duck Mountain.

The Canadian Northern Railway line is located in the south half, near the centre of the township, running in a westerly direction to Favel River, from which it turns northerly.

The soil, where dry, ranks 1st and 2nd class.

Township 36, range 24.—The two southern rows of sections in this township are mostly covered by Duck Mountain, which is rough, hilly and broken, and covered with thick dry timber and windfalls, interspersed with bluffs of large green spruce and poplar. The whole is mixed with an extremely thick growth of willow and alder.

The remainder, with the exception of a small coteau extending east and west, and covered with pine, spruce and poplar good for lumbering purposes, is a low burnt country overgrown with a high second growth, and interspersed with numerous bluffs of dry and green timber.

It is also much broken by numerous hay, willow and tamarack swamps.

The Canadian Northern Railway crosses westerly through the centre of the township.

For the purpose of carrying on the subdivision of the township, I cut a waggon road through the north part as far as Sinclair River, a distance of  $5\frac{1}{2}$  miles. It may prove useful to settlers intending to locate here.

Sinclair River runs across sections 35 and 36 in a northwesterly direction. It is a stream 30 links wide by 18 inches deep of excellent water.

Several smaller streams, tributaries of this river, water the interior of the township. The land, where dry, is good for agricultural purposes, but 50 per cent of the township is too wet to be of any use.

In connection with the "Canadian Northern Railway," known till a few weeks ago as the Lake Manitoba Railway, I may say that during last summer it was extended from "Sifton" station to "Cowan," a station at the intersection of North Duck River, distant 54 miles from "Sifton."

Trains have been run over this extension regularly every week since last fall, and the company is accumulating large piles of rails and supplies of all kinds for the continuation of the line early in the spring.

The construction of this railway has been the cause of a great influx of settlers into the Swan River valley, so much so that nearly all the good land surveyed in that district in 1897 is taken up, and there were at the time of my departure about 250 souls in the settlement at Favel River. There are three stopping places, three general stores and a land office with a Mr. Harley as resident agent.

There is but little available agricultural land in the country covered by the outlines I ran. However, strips of good land are found in range 22, on each side of streams coming out of Duck mountain, as well as in the foot hills in range 23, and owing to their proximity to the railway, I would recommend the subdivision of the west halves of townships 33 and 34, range 22, and the east halves of same townships in range 23. I would also recommend some subdivision surveys in townships 31, 32, 33 and 34, ranges 20 and 21, along the Pine River road, but in performing the latter the surveyor should be so instructed as to subdivide only the lands fit for settlement, as a good percentage of this land is unfit for any use.

In the course of my season's work, covering a large area of bush land, the only timber I found worth mentioning is in the foot hills of Duck mountain, in townships 30, 31, 32, and a fraction of 33, range 22, where spruce good for lumbering purposes may be found in paying quantities. Some good spruce is also found, as aforesaid, in township 36, range 24, but here, as well as in range 22, a certain quantity of this timber is now being cut by the Canada Northern Railway contractors for ties. I might also mention the fact that all over Duck Mountain thousands of acres of fine, large spruce timber has been destroyed by fire during late years, and now lies over the ground in large windfalls, rendering the walking through this country very arduous.

The damage done to the public domain by these fires is incalculable, and some measures should be taken to prevent their repetition.

In carrying on my surveys great difficulties had to be contended with, the roughness of the country covered by high windfalls, the scarcity of feed for horses, the excess of water, the softness of the ground, the impossibility of having the camp outfit follow the work, and the suffering the horses had to endure with the "bull dogs," the curse of the country, of which every surveyor complains when he works in a bush country, and for which there is no remedy; these were so many difficulties which impeded the progress of the work.

The necessity of walking from six to twelve miles a day from camp to the work, and the return at night over such high windfalls or through deep muskegs was considered by every man of the party much worse than the work on the line, the walk being enough of itself to tire anyone.

In conclusion, I may say that never before in my years of service as a surveyor, have I experienced so much hardship.

I have the honour to be, Sir,

Your obedient servant,

P. R. A. BELANGER, D.L.S.

# Department of the Interior.

No. 14.

## REPORT OF ERNEST W. HUBBELL, D.L.S.

SURVEYS IN SWAN RIVER DISTRICT, MANITOBA AND THE NORTH-WEST TERRITORIES.

OTTAWA 9th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following report of my field operations during the past season in the Swan River district.

In accordance with instructions from you dated the 20th of May, I left Ottawa as soon as possible for the Swan River district, Manitoba. I spent one day in Winnipeg purchasing the necessary camp equipage, supplies for the season, &c., which I shipped on the Manitoba and North-western Railway to Yorkton. I arrived at Yorkton on the 31st of May where my outfit had been brought in a few days previously from its winter quarters about 30 miles north, in accordance with a telegram to that effect which I had sent from Ottawa.

I regret to report the loss of three of my horses, two of which died shortly after having been delivered to Mr. Wm. Reekie, who had charge of them for the winter, and the third died a few days previous to my arrival. The cause of death as stated by Mr. Reekie was "general debility and influenza which was epidemic amongst horses in this country last winter." I was handicapped by the loss of these horses, which placed double work upon the others, and retarded to a great extent rapid transit and field manœuvring of my outfit, especially as I was engaged the greater part of the season running base lines and meridian exteriors in the Duck Mountains and Porcupine Hills, an exceedingly rough and thickly wooded country, which necessitated the constant use of pack horses.

By the 1st of June the necessary repairs were made to my outfit, the horses were shod, freight was hauled from the station, and my party complete and in camp with the exception of Mr. Revel. He was appointed to my party before I left Ottawa, but he failed to report and I have not heard anything of him.

We arrived at Fort Pelly on the 4th June, where I stored with the Hudson's Bay Company a large portion of my supplies, which was freighted thus far by two extra teams hired for the purpose at Yorkton. I also left one waggon here.

On 6th June I left Fort Pelly with my outfit for the 9th base in the Duck Mountains. The nearest we could approach to our objective point with the outfit was 8 miles north of the base at the foot of the mountains. Here, on the banks of the Roaring River we pitched camp and made preparations to pack what was essential for the work and of use on a flying camp. On the 9th of June having left the main camp in charge of the cook, we proceeded with pack-horses to our starting point on the 9th base, township 32, range 28, which we reached the next day, and pitched camp east of the township corner and opened up about half a mile of the base line.

On the 18th we completed the survey of the base across range 27, and moved our camp to the township corner. This line runs through very rough, hilly and broken country, crossing numerous coulees and ravines varying in depth from 60 to 200 feet, and is thickly timbered with spruce and poplar varying in size from 4 to 40 inches in diameter. Recent fires have destroyed most of this immense timber, which has been blown down, and lies piled in tangled heaps, making transport most difficult and tedious, even with pack-horses. The line intersects numerous streams, the water of



which is clear and very hard. The soil may be classified as 2nd and 3rd, the surface soil of black loam varies in depth from 2 to 4 inches, with a subsoil of gumbo or gravelly clay. Many of the higher ridges are covered with boulders and gravel.

On the 20th, I commenced the survey of the meridian between ranges 26 and 27 and produced it north to the correction line. The country to which it runs is very broken and hilly, intersected by deep ravines, large creeks and the Roaring river. It is entirely covered with brulé, heavy windfalls, green spruce, poplar and gray willows; as may be imagined progress in this kind of country was slow and difficult, principally owing to the very rugged and broken surface of the mountains.

In many places the sides of these ravines were so steep and the footing so insecure, that it was with the greatest difficulty the axemen could maintain their equilibrium in order to clean out the line.

We finished the jog of this meridian on 8th July, and the following day reached our main camp, having been away from it exactly one month. It has been my misfortune to have had some hard and varied experience in camping and surveying in the North-west, but this line was the most difficult and troublesome I have ever surveyed. On the 5th of July two of my men were prostrated by the heat and incapacitated from work for some days. The countless thousands of large "bull-dog flies" upon which smudges had no effect, made the unfortunate horses at times unmanageable and together with the myriads of mosquitoes and black flies little or no rest was obtained night or day by man or beast.

There is a quantity of fine timber on the northern slope of the mountains in this vicinity untouched by fire. The soil varies from a few inches of black loam to sand and gravel, with clay and gravelly subsoil. On the 13th of June, we had quite a heavy frost, but from then until 8th July the heat was at times intense. Numerous heavy rain storms also retarded the progress of our work. From here we proceeded to the 9th base in range 31, and ran the meridian outline between ranges 30 and 31 north to the correction line, which we completed on 20th July. This line from the foot of the Duck mountains runs through a fine stretch of country; the surface is generally undulating, but level in places. The soil might be called second-class although the alluvial soil is black loam, from 4 to 12 inches, with subsoil of sand or gravelly clay. The line crosses the trail from Pelly to the land office on the south side of the Swan river and the trail from Pelly to Swan lake on the north side of the river, where it crosses the Swan river, about 8 miles from the base line; the water averages 8 feet in depth and the current is from 2 to 3 miles per hour; the cut banks are 8 to 10 feet high.

The country is about half covered with small poplar and willow, the remainder being open prairie or small scrub. This line also passes through some magnificent hay lands south of the Swan river, and since the survey several settlers have located in this vicinity. A few small lakes were also seen east and west of the line in township 33; with the exception of these lakes and the river, no water is readily found; however, by digging, as we frequently had to do, it may generally be obtained at 4 to 10 feet. From here we proceeded to Lac la Course in range 32. As the township corner on the base line is in the lake, we started the meridian from the north-east corner of section 32, thence ran north two miles, then west two miles, and then north to correction line, where we completed the jog by the 28th July. This meridian runs through as fine a section of country as there is in the valley, nearly all open prairie. The soil is first-class, generally 12 to 18 inches of black loam, with clay subsoil; the surface is level or rolling. Swan river is crossed three times, about  $6\frac{1}{2}$  miles north of the base. This is indeed a fine agricultural section, and doubtless will soon be settled upon. The trail from Pelly to Swan Lake crosses the river about half a mile east of the meridian. It is most desirable that a bridge should be built here, as the crossing in the spring is very dangerous and difficult.

From here we proceeded to Thunder hill, and by the 9th of August, had finished that portion of township 35, range 29, which was left unsurveyed last season.

It was astonishing to see the number of claims taken up in this township. When one considers that last season not a squatter was within 50 miles of this vicinity, and

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now I believe every homestead in the township is taken, it is unnecessary to make any comment upon the qualifications it possesses for settlement.

From here we proceeded with our outfit as far as possible in a northerly direction to the 10th base line. Leaving the main camp pitched on the south branch of Woody river, we loaded our pack horses and followed up the Manitoba boundary to its intersection with the 10th base.

I observed for azimuth on the 10th August, and the following day opened out a mile of the base, and brought up the balance of the flying camp. On the 18th we finished the base across range 30, and the following day moved our flying camp two miles west and four miles south. Four miles of this line is through thick green poplar and some spruce of various dimensions, and willow, the other two miles is all brulé, fallen timber and willow. The surface is practically level and the soil first-class, being of black loam 10 to 16 inches deep, with clay subsoil. Water along this line is very scarce. One peculiarity, much in evidence, was the myriads of "wasps' nests," on an average one to every three chains. As they were in the ground, we did not perceive them until they were disturbed by the men using the brush hooks, and then they made their presence known in a manner not to our liking, in fact we had to burn them out before it was possible to pass, and many a sting we received.

On the 20th of August, we commenced work on the meridian outline between ranges 30 and 31, and finished on 2nd September, having been delayed three and a half days by incessant rain.

The first seven miles runs through thick brulé, fallen timber and willow. The remainder of the meridian is through small poplar and scrub.

The surface is fairly level with a gradual slope to the south. The soil is of good quality, a little sandy in places. Water was very scarce along this line. From here we proceeded to township 36, range 29, which we commenced to sub-divide on 6th September and finished all that was necessary by the 22nd September.

The northern part of this township is thickly covered with large green poplar, willow and some spruce, varying in size up to 40 inches in diameter. Towards the south the timber merges into small bush and willow scrub. The surface is quite hilly and the south branch of Woody River, a stream from 30 to 40 links wide and two to four feet deep, flows easterly through the centre of the township. Along its valley, following the windings of the stream, is a tract of splendid hay, which would furnish sufficient feed for the winter for a large number of cattle. One or two other minor streams assist in furnishing a good supply of water all the year round. The soil is not of first quality, being mostly sandy, with gravelly clay subsoil.

From the 7th to the 10th September we had quite a heavy frost every night.

From here we proceeded to township 36, range 28, and surveyed the remainder of this township, which had been left unfinished last year. The part surveyed is covered with thick green poplar and willow, with a large muskeg in sections 25, 26 and 35. The trail from Fort Pelly to Swan Lake runs north-easterly across the township. Whilst in camp here on the 2nd of October we had our first snow storm; about 10 inches of snow fell, and remained on the ground for some days. There are several settlers in this township.

On the 5th October, we moved camp to township 35, range 28, in order to complete its survey which we did by the 25th. The trails were bad from snow and mud. This township is a most desirable one for settlement, the soil first-class, and the surface is level, or undulating, except in the south-west where it is hilly. It is partly covered with small poplar and willow. Plenty of building timber is to be had along the banks of Swan river and the creeks, of which there are many. A fine stream, about 30 links in width and 2 to 4 feet in depth, flows northerly through the centre of the township.

I have named it Lobstick brook because of several such landmarks along its banks. There are a few settlers in this portion of the township. Considerable ploughing has been done and some houses built, in fact several lines had been picketed out by the settlers, previous to my arrival. There is a great quantity of hay in the valleys; about 200 to 300 tons had been cut and stacked.

The weather was very disagreeable and cold, in fact we scarcely saw the sun during the month of October. From here we proceeded to township 36, range 26, and finished

the unsurveyed portion of it. The lines surveyed ran through large green poplar and some fine spruce. I understand a saw-mill is to be erected at once in section 30. The temporary land office of this district is located in section 11, close to Favel river, and I was informed that it is having a great rush of business. The most of this township is settled upon, and some fine grain is grown in this vicinity. We had several heavy snow storms whilst in camp here.

We next went to township 37, range 27, and surveyed a portion of it, but, on account of sickness, I was obliged to leave ten miles unfinished which is covered with thick poplar, spruce and windfall.

The surveyed portion of the township is nearly all settled upon.

The line of location, of the extension of the Dauphin Railway, runs northerly across the centre of the township. On the 21st of November, with the temperature registering 35° below zero, we moved camp.

On the 24th we pitched camp in Fort Pelly, and the following day started re-marking the 2nd meridian. This line had to be entirely re-surveyed and cut out, not one iron post was found on the entire six miles. There are two rows of mounds and posts, one being the old system of survey. Unfortunately we were unable to destroy them, or build new mounds, because the ground was frozen to a depth of one foot or more, but these old mounds are all located and will be destroyed in the spring. Iron survey posts and quarter section wooden posts were placed in their proper positions on the meridian. We located an error of one chain and 47 links on this line, which throws the township corner, on the 9th base, that much too far south. I also ran the meridian in range 33 and subdivided the fractional township adjoining, but, for the reason above noted, I was unable to dig mounds, so left iron and wooden posts in their proper positions, the mounds to be made in the spring. I had to open a considerable portion of the north boundary of the Hudson's Bay Company reserve, in order to locate it and run lines to settlers' houses, of which there are quite a number, all clustered together, having been there 25 years or more.

The season being now far advanced, and as I was almost crippled with rheumatism, contracted during the latter part of the season, I was compelled with much reluctance to stop work. Accordingly upon the 7th and 8th of December, I stored my outfit with E. A. W. McKenzie, of Fort Pelly, settled the survey accounts and paid off some of my party. The following day I left Pelly for Yorkton, remained there one day and paid off the rest of my party and settled outstanding accounts. I left Yorkton on Monday the 11th December and arrived at Winnipeg that evening, where I was obliged to lay over for a few days, on account of ill health.

#### GAME.

This country abounds with moose, bear, wolf, fox, lynx and mink. We killed several moose and bears.

#### METEOROLOGICAL OBSERVATIONS.

Taken altogether, the season for surveying was fair, with the exception of October, during which month it rained almost incessantly. The maximum temperature for October was 41° on the 15th, for November, 29° on the 17th. The minimum for October, on the 29th was 14°; for November, on the 25th, 42° below zero.

I have the honour to be, Sir,

Your obedient servant,

ERNEST W. HUBBELL, D.L.S.

# Department of the Interior.

No. 15.

REPORT OF J. C. DESMEULES, D.L.S.

SURVEYS IN SWAN RIVER DISTRICT, MANITOBA.

MURRAY BAY, 26th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following report of my field operations during the last season in the Swan River district, Manitoba.

Pursuant to your instructions dated the 21st May last, I left home on the 1st of June, and reached Quebec the day following, where I stayed until the 6th, making returns of surveys performed during the previous winter, under instructions of the Department of Colonization and Mines, province of Quebec.

I left Quebec on the evening of the 6th June and reached Ottawa in the afternoon of the following day, where I met Mr. J. A. Belleau, D.L.S., who had been appointed as my assistant during the coming expedition. I left Ottawa on the 8th and arrived in Winnipeg on the 10th. I stopped there until the 14th, hiring men, buying provisions and general outfit whilst waiting for the train going to Yorkton.

I reached Yorkton on the 15th of June, where I had to wait for the greatest part of my outfit, which, unfortunately, could not be at hand until the twenty-second day of this month.

In the meantime, owing to reliable information as to the nature of the country I was to travel through during my field operations, I deemed it advisable to use carts instead of waggons. Having purchased two waggons in Winnipeg, I gave one in exchange for two horses and one second-hand cart, keeping one waggon only. Upon this bargain I was happy to congratulate myself when I was at work later on. My stock of horses being completed by the purchase of four, besides the two above mentioned, I attended to the repair of two second-hand carts and the construction of a new one. My outfit being thus completed, and after securing my supplies just arrived from Winnipeg, I proceeded immediately, on the morning of the 23rd June, on my way to Fort Pelly, where I arrived on Sunday, the 26th, having been delayed all Saturday, and until ten on Sunday by a very heavy rain. I left Fort Pelly the day following and on the 30th of June reached the north-east corner of township 34, range 28, west of the principal meridian, which, according to your instructions, was the starting point of my operations. I, therefore, the same day began tracing the north boundary of this range, after having permanently fixed with an iron post and mound the above north-east corner, which had been formerly marked by a temporary wooden post only.

According to your instructions, I made the subdivision of the northern three-quarters of the range, from the correction line down to the north limit of sections 7, 8, 9, 10, 11 and 12, but having made the survey of the north boundary of township 34, range 29, and having to go south to trace its south limit, I deemed it advisable, owing to careful personal investigations over the surrounding country, to complete at once the whole subdivision of range 28, except sections 1, 2 and 12, which are situated in the worst part of the northern ridge of Duck mountain, broken by deep ravines, thickly wooded with poplars and spruce of very large size.

Township 34, range 28.—The first two miles of the north boundary of range 28 are over a level country, covered with bluffs of poplar and willows, with hay swamps in the west halves of sections 36 and 35. Sections 34 and 33 are level scrubby prairie, intersected by two creeks, one at the west end of section 34, and the other about the middle

of section 33, both running north. Sections 32 and 31 are more broken country intersected by coulees and creeks and covered with bluffs of green poplar, except at the end of these sections where it is more level and scrubby.

East boundary of sections 2, 11, 14, 23, 26 and 35.—The first two sections were left unsurveyed, over the remaining sections the line runs through scrubby, undulating prairie and intersects a branch of Roaring river, and the south branch of the Fort Pelly trail to Swan lake in section 23.

East boundary of sections 10, 15, 22, 27 and 34.—The country on this line is slightly sloping to the south and east as far as section 27, and is covered with thick scrub and small poplars (second growth), then level scrubby prairie with willows in bluffs in the first half of section 27.

East boundary of sections 4, 9, 16, 21, 28 and 33.—This line intersects the Roaring river branch, above mentioned, three times in the first half of section 4, and the south branch of the Fort Pelly trail in the first half of section 21. The country is slightly sloping to the south and is covered with a dense second growth of scrub and small poplars.

East boundary of sections 5, 8, 17, 20, 29 and 32.—This line runs through a thickly wooded country with large poplars, spruce and underbrush for the first half of section 5, then over an undulating country overgrown with a second growth of small poplars and scrub. It crosses a small lake of fresh water in the northern half of section 8, then a muskeg about six chains wide, a small creek running west and the Fort Pelly trail in the northern half of section 20. Two small creeks cross this line both running west, one in the north half of section 29, and the other in the south half of section 32.

East boundary of sections 6, 7, 18, 19, 30 and 31.—This line runs through fallen timber and small green poplars for the first half of section 6, then burnt scrub and willows interspersed, now and then, by thick scrub and green small poplars. The country becomes level or slightly undulating in sections 18 and 19, then more broken and scrubby for the last two sections. Several creeks and swamps are met on this line, namely on sections 31, 30, 19, 18 and 17.

South boundary of sections 1, 2, 3, 4, 5 and 6.—This line runs along the northern slope of Duck Mountain through a country covered a few years ago with a heavy growth of large timber now destroyed by fire, and replaced by young poplars, willows, alders and scrub. Several creeks are met which rise in Duck Mountain, and all empty into that branch of Roaring River which enters range 28 on section 4, going out on section 36 after meandering through sections 3, 11, 14, 24, 25 and 36. The Fort Pelly trail enters this range in the south part of section 30, encroaching on sections 29, 20, 21, 22, 23 and 24. With a little help from the Government, this trail might be much improved, and become very useful to people intending to settle in this part of the country south of Swan River.

The whole of this range may be rated first-class, either for farming or grazing purposes, being abundantly supplied with wood of every kind, good clear water from creeks or lakes and land of the best clay and black sandy loam.

Township 34, range 29.—North boundary of range 29.—This line crosses several creeks in sections 36, 34 and 33, all emptying into Swan River; it crosses the river itself three times in the east half of section 32, and once in the west half of section 31. Swan River is here a stream averaging one chain in width by two or three feet deep, with stony bottom, flowing at the rate of two or three miles an hour. It is a powerful river overflowing its shores, during high water season, to the foot of its ridges. Section 36 is partly level prairie and partly broken by a creek, two to three feet deep by seven or eight feet wide, flowing at the bottom of a deep coulee, wooded with large green poplars. The country over sections 35, 34 and 33 is broken and hilly with small spaces of level prairie, and several creeks amidst deep ravines and coulees.

East boundary of sections 2, 11, 14, 23, 26 and 35.—This line runs on the northern slope of Duck Mountain, amidst fallen burnt timber and scrub, as far as half of section 11, crosses a small creek streaming eastward, then the country is interspersed here and there with fallen timber and overgrown with small poplars, and scrub. The Fort Pelly trail, together with a small creek running west, are crossed in the north end of section 23. In sections 26 and 35 the line runs in a broad valley overgrown with spruce,

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poplars, alders and hay meadows, and crosses a creek streaming northeasterly through section 36.

East boundary of sections 3, 10, 15, 22, 27 and 34.—This line goes down the northern slope of Duck mountain as far as a small lake on the north half of section 10; then runs over an undulating country up to section 22, where the Fort Pelly trail is met; then a small creek streaming in an easterly direction through section 26. From the Pelly trail, the country becomes more broken and hilly, interrupted by deep coulées emptying their waters into the creek above mentioned.

East boundary of sections 4, 9, 16, 21, 28 and 33.—This line is through a country overrun by fire, is obstructed by burnt fallen timber of a large size and a second growth of small poplars, willows and scrub; it crosses the Fort Pelly trail on section 16, then a small creek of good clear water four times in sections 21 and 22. Sections 21, 28 and 33 are undulating country, broken by deep coulées emptying their waters towards the Swan river, and thickly covered with willows, poplars, scrub and spruce, interspersed here and there with some spaces of scrubby prairie.

East boundary of sections 5, 8, 17, 20, 29 and 32.—The country along this line slopes to the north for the whole of section 5, then undulating, or rolling prairie, becomes more hilly and broken by deep coulées, especially on sections 20 and 32. A creek is crossed in the south part of section 17, and Fort Pelly trail about the middle of the same section. The country along this line is covered with burnt fallen timber, and is overgrown with small poplars, willows and scrub for the whole of section 5 and the half of section 8, which is properly the foot of the northern slope of Duck mountain; then rolling scrubby prairie with patches of willows and scrub.

East boundary of sections 6, 7, 18, 19, 30 and 31.—This line runs down the northern slope of Duck mountain as far as the northern limit of section 6, then over an undulating country as far as the north boundary of section 30. It is broken by deep coulées in section 31, where it crosses Swan river in the middle of this section. A small creek is met in section 7 and the Fort Pelly trail, south of Swan river, in section 18.

South boundary of sections 1, 2, 3, 4, 5 and 6.—This line runs over the northern slope of Duck mountain and crosses several creeks, all streaming northward. It is all burnt country of the best farming quality, obstructed by fallen timber, and overgrown with small poplars, willows and scrub; slightly rising westward in the last two sections especially.

The whole of this range is partly undulating and partly broken country. The soil is generally black loam with a rich clay or sandy loam subsoil. Fifty per cent may be considered as very desirable land for farming purposes; the rest, that is the north half although more broken and hilly, may be used with advantage both for farming and grazing purposes. The numerous coulées, hay meadows or hay swamps, and bluffs of green wood offer abundant water, food and shelter to cattle all the year through. Swan river enters this range on section 31, encroaches south, about half of sections 31 and 32, and crosses the correction line three times in the north-east half of section 32, winding afterwards into township 35. Another stream flowing north-easterly through sections 6, 8, 16, 22, 26, 27, 35 and 36, besides several small creeks and ponds distribute their waters abundantly all over range 29.

Township 34, range 30.—North boundary of range 30.—This line runs from the north-east corner of this range through a thickly wooded country, overgrown with a large growth of poplars with a heavy underbrush of willows. It crosses Swan river three times in the last half of section 36, in a deep valley, and over a steep hill covered with poplars, willows and alders. The north branch of the Fort Pelly trail to Swan lake is also crossed in the north-west angle of section 36. From the quarter section post of this section, the country is scrubby prairie up to section 34, where it is undulating and overgrown with willows and scrub as far as section 33, where small poplars are found either in bluffs or scattered about, with patches of scrubby prairie here and there.

East boundary of sections 2, 11, 14, 23, 26 and 35.—On starting from the south boundary of range 30 this line traverses down the gently falling northern slope of Duck mountain through a country overrun by fire and now overgrown by a new growth of willows, poplar and scrub. It crosses the south branch of the Fort Pelly trail to

Swan lake, near the north boundary of section 11 ; then crosses the Bearshead creek six times on section 14, in a dry spruce swamp obstructed by a dense fall of dry timber.

From the north boundary of section 14, the country is a scrubby, undulating prairie as far as the ridge overlooking Swan river northward. The line crosses this river in the northern half of section 26. Swan river is here one and a half chains in width, with a swift current and one to one and a half feet deep. The ridge on its left bank is sixty to seventy feet high, ending at sixty chains on section 26. Then the country is more even, being open, scrubby prairie as far as the correction line.

East boundary of sections 3, 10, 15, 22, 27 and 34.—This line crosses Bearshead creek in section 10, the south branch of the Fort Pelly trail in section 15, Swan River in section 22, and north branch of the Fort Pelly trail near the north boundary of sections 26 and 27. The country, at the commencement of this line, is slightly sloping to the north as far as the crossing of Bearshead creek, and is overgrown with small poplars and scrub. It is stony and hilly, scrubby prairie as far as the north boundary of quarter section 15, then undulating, covered with dry and green poplars and willows. From the top hills north of Swan River the country is sometimes level, sometimes undulating and swampy as far as the correction line.

East boundary of sections 4, 9, 16, 21, 28 and 33.—This line is through a country sloping to the north, overrun by fire and covered with fallen timber and a thick growth of small poplars, willows and scrub. Bearshead creek is crossed twice in section 9 ; the south branch of Fort Pelly trail about forty chains farther north ; a small creek running east about the middle of section 16 ; thence on a slope to the north the line reaches Swan River in the south part of section 21. Beaverdam creek is crossed in the north half of this section, and the north branch of the Fort Pelly trail in section 28. Thence the line runs through a level or undulating, scrubby country to the north boundary of range 30.

East boundary of sections 5, 8, 17, 20, 29 and 32.—This line crosses Bearshead creek three times in ten chains at the foot of Duck Mountain ; half a mile from its starting point it crosses the north branch of the Fort Pelly trail to Swan Lake in section 8 ; it then crosses a wet spruce swamp in the first part of section 17, and Swan River in the north half of this section.

The north shore of Swan River is swampy as far as about fifteen chains north, then the country rises slightly to the north, the line crosses a small creek in the south half of section 20 ; the Fort Pelly trail in its northern half, and the Beaverdam creek in the north half of section 29 ; then the line is through a level or undulating country overgrown with dry and green willows and small poplars.

The space, situated between the south branch of the Fort Pelly trail and the south half of section 17, is rough and hilly, scrubby prairie. Sections 17, 20 and 29 are swampy and broken country, then undulating and overgrown with dry and green willows, poplars and scrub to the correction line.

East boundary of sections 6, 7, 18, 19, 30 and 31.—This line crosses the south branch of the Fort Pelly trail to Swan lake in the north end of section 6 ; Swan river in the middle of section 18 ; the north branch of the Fort Pelly trail in section 19, and the Beaverdam creek in the north end of section 30. The country along this line is sloping north as far as the first crossing of the Fort Pelly trail above mentioned, and is overgrown with poplars, willows and scrub. From this to the Swan river crossing, it is undulating and hilly, covered with dry and green willows and scrub as far as section 19 ; then a thick growth of spruce over a stratum of wet moss, about two or three feet deep.

South boundary of range 30.—This line runs west through the northern slope of Duck mountain, intersecting several small creeks in sections 1, 2 and 4 and the Bearshead creek in section 5. The country is slightly sloping to the north and is overgrown with a thick growth of willows, young poplar and scrub.

Swan river and the Bearshead creek, besides many other streams of smaller bulk, water abundantly the whole of this range and make it one of the most desirable parts of the country, both for farming and grazing purposes ; except a certain strip of land which may be considered of no value whatever, being rough and stony, especially in parts of sections 8, 9, 10, 15 and 14.

## Department of the Interior.

Sections 29 and 30, and part of sections 31 and 32 are a spruce swamp, covered with a thick bed of moss, and may also be considered of no farming value, but may be of much advantage to settlers, as they might get out of the thick growth of spruce overgrowing these sections, either firewood or building timber in great quantity.

Swan river enters this range between sections 7 and 18; encroaches a little north-west into section 18; then flows north-easterly across sections 17, 16, 21, 22, 26, 25 and 36. It averages one chain in width, with slow current, ten to fifteen feet deep as far as its crossing of the north boundary of sections 22 and 23, where it is a little wider, averaging two to three feet deep with boulders in bed as far as its crossing on the correction line.

Bearshead creek enters section 5, and after running a north-easterly course across sections 5, 4, 10 and 11, turns to the north and several times crosses the eastern limit of sections 14, 25 and 36, and then empties its waters into Swan River in the northern corner of section 36. It is a stream averaging 25 to 30 links in width, by one to two feet deep, with stony or sandy bottom and swift current.

As a general remark, I may state that the part of the country where I have been working during the last season, has been many times the prey to disastrous conflagrations, and very little of the original forest has been spared; a new growth of poplars, willows, alders, &c., covers the ground where it is not open prairie. With a little clearing it may be used with great advantage for farming purposes, being of the best clay or black sandy loam, whilst the numerous coulées, hay swamps and meadows will afford the best grazing lands and hay for cattle.

The 2nd day of October we had a heavy fall of snow, accompanied by a regular gale from the east, which covered the ground with two feet of snow, and drifts in some places four to five feet deep, making the work a very hard task, both to men and horses. I completed, however, the survey and subdivision of township 34, ranges 28, 29 and 30, on the 27th October. I worked during the last five or six days through snow six or eight inches deep, and a low temperature. I would have willingly continued work through township 33, range 30, as your last instructions directed me, but the severe cold froze the ground three or four inches deep, besides the bed of snow above alluded to, made the work of building mounds a long and tedious task, and, above all, the want of food for the horses, without the possibility of getting any, and as the cold and bad weather continued I was obliged to close my field operations for the present season.

I made my preparations, in consequence, to start homeward via Fort Pelly, where I arrived on Saturday, the 29th, after travelling two days over very bad roads and a very difficult crossing of the Swan River.

I may be allowed to draw the attention of the Government to the necessity of having a bridge built over this river, as it is always a difficult task, even a dangerous one, to cross it at this place, especially with loaded waggons or carts. In view of the fact that a large influx of settlers is expected in this district next spring, it would be most desirable if a little money was spent in improving the main trails, both north and south of Swan River, as these are the only routes along this part of the country now open to cultivation.

I left Fort Pelly on the 1st of November, and arrived at Yorkton Thursday, the 3rd, where I left my horses and outfit in charge of M. M. Langstaff, of this place. After waiting there until the 7th I started for Winnipeg, and arrived there the night of the same day. After having settled accounts and paid my party I left that city on the 10th, and arrived in Quebec the night of the 12th.

I had to wait here for a conveyance to Murray Bay where I arrived on the morning of the 16th November.

I have the honour to be, Sir,

Your obedient servant,

J. C. DESMEULES, D.L.S.



## No. 16.

## REPORT OF C. F. AYLSWORTH, D.L.S.

## RESURVEYS NEAR YORKTON.

MADOC, 28th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following general report of my surveying operations during the past season, pursuant to instructions received from you dated the 21st day of May, 1898.

I left Madoc on the 25th of May, and after remaining a day in Ottawa to arrange some details in the Department, I arrived in Winnipeg on the 28th, where I remained until the following Saturday to purchase a transport outfit, supplies and camp equipage. I also engaged three men in Winnipeg, where the assistant and two other members of my party joined me. On Saturday I left for Yorkton, where I arrived late at night, and the car containing the effects arrived according to arrangement by the same train. I found Yorkton to be a commercial centre of no mean importance, containing a number of large general stores, where goods can be obtained at comparatively reasonable prices. It has good schools, churches, hotel accommodation, and all the necessary appurtenances of a modern town. The citizens have such an abiding faith in the permanence and future bright prospects of their town, that some are making additions, some alterations, some tearing down old buildings and replacing them with new and commodious establishments. Outsiders also must entertain the same roseeate views of Yorkton's bright prospects, when such a discreet, calculating concern as the Hudson's Bay Co., will open as it did last fall, a new branch general store there. The settlers around Yorkton are engaged particularly in cattle ranching, but they are gradually dipping into mixed farming, their efforts in this latter respect being attended with success. But Yorkton prides itself, principally on being the commercial centre of a large cattle ranching industry. On account of the comparatively favourable freight rates, cattle are driven here from Prince Albert to be shipped; good accommodation for the trade is afforded.

On Monday afternoon, 6th June, we started on a fine trail leading direct from Yorkton to Fort Pelly, my destination being where the trail crosses the Whitesand River, in township 30, range 1, west of the second meridian, where I arrived on the 8th. For a distance of about 20 miles north of Yorkton on either side of the trail the country is sparsely settled. The settlers carry on mixed farming and ranching. A number of Galician families have located along what are locally known as the "Sliding Hills." Some of them are very industrious, and in fact so far as my observation went and from information I received, the Galicians in this particular locality are plodding along and doing as well as could be expected, taking into consideration the scanty means in their possession upon their arrival in this country.

I commenced reposting township 30, range 1, west of the second meridian on the 9th of June. I was somewhat embarrassed at the start upon finding that the square iron post defining the north-east angle of the township was marked **xxLx** instead of **xxx**, but a little further search proved to me that the post had been improperly marked. I then continued and completed the reposting of this township and found that the original measurements had been fairly well made. I consider that this township decidedly needed reposting for the reason that it would have been impossible for any one excepting a surveyor to find the great majority of the corners or for a land agent to locate a

## Department of the Interior.

settler. The original posts were all wooden, the mounds were so flattened and undistinguishable from other and similar elevations near by, the pits were filled flush with the surrounding surface of the soil and the top of the original post had disappeared, so it was only possible to identify the corner by finding the decayed bottom of the original post after diligent search among numerous similar elevations resembling mounds. The Whitesand River flows easterly across the north end of this township. The soil is generally first-class sandy loam; the surface of the north tier of sections is somewhat broken by the banks of the Whitesand River, where considerable timber exists. The centre, southerly and south-westerly portions of the township are open, with a light spattering of small willow and poplar scrub. The surface was denuded of most of this by fire last spring. The east side is similar but dotted with bluffs of poplar. There are no settlers in the township, but there is sufficient timber for the immediate necessities of settlers, and within a reasonable distance there is an abundance of timber for building, fuel and fencing purposes; altogether I would consider this a very desirable township for settlement. A first-class trail leads through the township from Yorkton to Fort Pelly, the latter is only nine miles distant. A settler in this township would have the advantage of two strings to his bow. Pelly is said to be a good market for butter, generally a cent per pound higher than in Yorkton. I saw settlers in the Stony Creek settlement who delivered their butter at Pelly on account of the superior prices to be had there.

On 8th July having about completed this township I decided to run some lines into the centre of township 30, range 2, west of the second meridian in order to locate a camping ground and find water, so I retraced the line westerly along the north boundary of sections 13, 14 and 15 in this township and from there to the lakes shown on the original plan of the township, but found that they had completely dried up and the ground was covered with a fine growth of hay. I made a few tests for water, but found none. So I then turned and ran south along the east side of sections 16, 9 and 4. The section and quarter section posts, so far as I saw, were all wooden, but the corners and lines were still quite distinct. I renewed all these corners according to the manual and decided to leave the balance for the present. The boundaries in this township are still quite easily found, and I, therefore, do not consider that it needs reposting at present at any rate. I then completed township 30, range 1, and on 13th and 14th July moved camp to section 14, township 27, range 32, and commenced work in this township on the 15th. I found iron posts and tin squares had been used to mark the section corners in this township, but as a number of the iron posts had disappeared I concluded that it would be better to have this township re-marked; in every instance where I found the original iron post at a section corner, I put in a new marked iron post in the site of the old one, and put the latter in beside the new one. I found a number of ranchers living in this township, who each owned a fine lot of cattle and were doing well. This township is exceptionally favourable for ranching on account of the abundance of wholesome water to be found in Stony Creek and the spring creeks tributary thereto, in the valleys of which are to be found considerable quantities of hay; large quantities are also to be found in the north-west portion of the township and goodly quantities in other portions thereof. The township might be described as half scrub and timber, and the other half scrubby prairie. It is a desirable one for settlement, the soil being of a rich sandy and clay loam of good depth.

I found the north boundary of this township to be very irregular and as none of the lands adjoining it, so far as I was informed, had been disposed of, under instructions from you I ran a new line, destroyed the old corners and established new ones. I saw wheat of last year's growth in the township that looked fine, still the settlers hereabouts do no mixed farming as they prefer horse or cattle ranching, the latter being more profitable and involving less labour. One settler had a herd of about one hundred bronchos, but he did not appear to be selling any as the demand is now for a higher grade horse. Cattle ranching is the great money-making industry of this district. Competition for cattle during the last year is said to have been the keenest in the history of the trade. It is not now a matter of to whom a rancher can sell his cattle, but to whom he will sell. Regarding prices of cattle, one large rancher told me that he had just sold one hundred head at an average of \$43 per head; another told me

that he had just sold two, three years old, not very large but fat, for a sum of \$78, so that it may be inferred, the ranchers are well satisfied with their lot.

Good trails are to be found leading in all directions throughout this township. A first-class road has been made from the north-east corner of section 10 and follows the meridian road allowance northerly to Kamsack P.O. From this corner the road is surveyed in a south-westerly direction to where it intersects the meridian road allowance running north from Saltcoats, which will also be graded excepting the first five miles north of Saltcoats which has already been done. The writer was of the opinion at one time, that the old well beaten trail was the most suitable road for that country, but experience has taught me, that there are no finer roads made than the north-west graded road. The settlers claim too that they make an effective fire guard.

The lake shown in section 7 on the original plan of this township has completely dried up. On 11th August I completed the resurvey of this township, and on the following day moved camp to section 16, township 27, range 31, west of the principal meridian and camped beside Two Creeks. Iron posts were found to have been used to mark the section corners in this township, but for the reason set forth which influenced me to re-mark the last township I decided to re-mark this one also. The original survey of this township was very roughly performed. I found the quarter section post on the east boundary of section 31 to be six chains too far west, the east boundary of section 32 to be nearly as much out, and also many other errors as shown on my plan of this township, which I found impossible to correct because so many sections had been disposed of, so that, generally speaking, I have simply renewed the corners in the township.

There is one settler only in this township, on section 16. A steam saw-mill for the manufacture of spruce, poplar and oak logs into lumber was erected and operated during the winter of 1897 and 1898 on section 25, down in the valley of the Assiniboine. The logs were cut and hauled five to ten miles from the north east of the mill. The lumber was sold mostly to Yorkton builders and to settlers adjacent to the mill, to whom the mill was quite a boon, but it is now closed down, the operators having disagreed among themselves, which has finally resulted in a lawsuit. Mr. Jacobs, the settler on section 16, is a very successful cattle rancher, who is carrying on some experimental work in mixed farming. Although the meteorological conditions prevailing in this district during the past season were the most severe of any for a number of years previous, I saw wheat, peas, oats, turnips and potatoes grown by him, and fine cauliflowers and cabbages, &c., by others. Still, the settlers here do not generally engage in mixed farming, although a number propose doing so in the near future, some having gone so far as to do some breaking with that end in view. The soil in this township is generally first-class sandy loam of good depth, but the east and more particularly the north-east portion of the township is very much broken by the banks of the Assiniboine, Stony Creeks and Two Creeks. The banks of these never failing water supplies afford considerable poplar suitable for building material and fencing timber. Plenty of stone is to be found throughout the eastern portion of the township for building and other purposes. Some quite extensive areas of hay meadows are to be found in the valley of the Assiniboine.

The unparalleled success attending the cattle trade during the past season has prompted the ranchers to increase the size of their herds, and this, together with the fact that some new ranchers have come in recently, has made the demand for hay a little greater than the supply. I, therefore, observed a disposition on the part of the present settlers to discourage new settlers, who are looked upon as interlopers, from coming in and cutting the hay that the former enjoyed the unmolested privilege of cutting. It is the cause of intense ill feeling; the spirit of opposition was exhibited rather ridiculously by one lady, who remarked that, "I do hope no more settlers will come in." This remark will be better understood when I tell you that this lady's family were the only settlers in that whole township, and they were located in the centre of the township. But of course this rivalry and opposition must cease, and the opposite state of affairs must prevail, when each rancher engages in some mixed farming, in order to supplement the present stock of hay, and it appears to me that ranchers in such a district, where mixed farming is possible, should be encouraged to engage in it.

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I may here digress to mention that just as we were taking our departure from our camping ground in this township, a deputation canvassed the party for subscriptions towards the first church for the Stony Creek settlement, and of course each member of the party contributed his mite.

I completed the survey of township 27, range 31, on 20th September, and on the day following moved camp to section 15, township 26, range 31, west of the principal meridian, where I found that the section corners had been marked with wooden posts. The east half of this township is very stony, and the soil is generally only second-class. In the west side of the township the soil is good. There is considerable timber for fuel. I found that the township had been fairly well surveyed originally. There are three families now residing within the township. These carry on ranching upon a small scale. They also winter and herd cattle for large cattlemen such as Gordon and Ironsides, for which they receive at the rate of \$6.50 per head.

This is where I first saw young women on horseback, herding and rounding up cattle. These young women ride at break-neck speed, turning and twisting rapidly in all directions as fearlessly as experienced cowboys. They mounted and dismounted as gracefully and as easily as experienced men. I saw one young woman mount into her side saddle on a fair sized broncho from the level ground. I asked her to dismount and mount again, in order that I might see how it was done, and, in an instant, she was off and on again from the same level as the horse.

About eight inches of snow fell on 2nd October, but it mostly all disappeared and we were treated to some fine weather during October. On 17th October I completed the survey of this township and moved camp to section 14, township 26, range 32, west of the principal meridian. By far the greater part of this township is open. Scrub and timber suitable only for fuel and fencing are to be found in the north-west and south-east corners of the township. The soil generally is of a deep sandy and clay loam. There are no permanent settlers in the township, but two ranchers from near Saltcoats put up hay, which is found here in limited quantities only, and winter their stock here. Trails lead in different directions to outside points, as shown on my plan of this township. The township altogether is a very suitable one for agriculturalists. I found that the section corners had been marked with wooden posts, and as the township had been fairly well surveyed originally, I confined myself to renewing the old corners and re-establishing lost section or quarter section corners forming the boundaries of sections which had not been disposed of.

It has been proven that plenty of good wholesome water may be had at reasonable depths by digging in this township. Game was not very plentiful in the early part of the season in the township in which I was engaged, but deer, chicken and duck were quite plentiful during the open season for such game, and more particularly in the vicinity of ploughed fields where hundreds of chickens were to be seen in the evenings. I completed the above township on 7th November, and as the ground had become frozen to such an extent that I did not consider it practicable to continue the season's operations any further, I decided to discontinue operations. On the following day I moved camp to Saltcoats, where I discharged that portion of my party which resided east; two members and myself remained in Saltcoats to properly arrange for the wintering of my outfit, to contract with a reliable rancher to winter the horses, and to pack the remainder of the outfit in a store-house, where I had it insured. On Saturday I discharged the remaining two men, and on Monday, 14th November, started for home. I remained one day in Winnipeg to wind up some business, and arrived home on the 18th. Before closing I desire to respectfully draw your attention to a point of detail that has impressed itself upon me very forcibly, viz.:—the permanent establishment of quarter section corners in woods, willow or scrub. The instructions to surveyors direct that in such cases no pits need be made to perpetuate the corner, but I cannot understand the philosophy underlying this idea. I take it that if it is important to establish a quarter section corner at all, it is also important that it should be established with a view to permanence in the bush as well as on the prairie, and that if pits are necessary on the prairie they are more necessary in the bush, because most of the posts destroyed in the bush are destroyed by fire. Fire lingers much longer in the bush than on the prairie,

where it skips along and generally merely sings the post, so that I submit that quarter section corners in the bush should be perpetuated by pits as well as those on the prairie.

I have the honour to be, Sir,

Your obedient servant,

C. F. AYLSWORTH, JR., D.L.S.

No. 17.

REPORT OF J. LESTOCK REID, D.L.S.

SURVEYS IN PRINCE ALBERT DISTRICT.

PRINCE ALBERT, 18th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to report that in accordance with your instructions of the 21st of May last I have completed the reposting survey of St. Laurent settlement and of townships 42, 43 and 44, range 1, west of 3rd meridian. The original section marks in these townships were with few exceptions totally destroyed, and I was obliged in almost every instance to re-run the section lines.

The soil in these townships is a sandy loam and the townships being adjacent to the south branch of the Saskatchewan river and within ten miles of the railway station at Duck Lake are most desirable for farming.

There is a fine country suitable for settlement extending for miles to the east of St. Laurent, the soil is stronger and better as one goes east from the river, more particularly in the Hoodoo country and over the Birch hills.

I produced the 12th base line east across ranges 14, 13 and 12, west 2nd meridian and the meridian outlines south. The country run over, with the exception of the south portion of township 43, is covered with a thick bush of poplar, spruce and some tamarack and birch. The timber is chiefly poplar of large size and all varieties; there are some fine bluffs of spruce, many trees measuring 3 feet in diameter. The soil is a clay loam overlying clay and the country, if cleared of the forest, would resemble the Melfort creek district. I take the opportunity of drawing attention to this remarkably fine country which extends from range 11, west 2nd meridian, west to the south branch of the Saskatchewan river, and more particularly along Doghide river, Leather river, Melfort creek and Carrot river.

Good soil, good water and hay, an abundance of wood and long slopes and reaches without a pothole or break: this country certainly cannot be surpassed in the North-West.

I have the honour to be, Sir,

Your obedient servant,

J. LESTOCK REID, D.L.S.

# Department of the Interior.

No. 18.

REPORT OF B. J. SAUNDERS, D. L. S.

SURVEYS IN SOUTHERN ALBERTA.

OTTAWA, 30th December, 1898.

E. DEVILLE, ESQ.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following report of my work in Southern Alberta during the past season under your instructions, dated the 14th of June, 1898.

Upon receipt of your instructions at Fort William, whither I had gone in advance, I proceeded as soon as possible to Calgary, having stopped off one day in Winnipeg to purchase camping outfit and some supplies. I arrived at Calgary on the 27th of June, and after arranging for part of my staff and making inquiries as to cost of horses, transport, &c., I left the following morning with my assistant for Macleod. Having found that I could purchase horses and waggons as reasonably at Macleod as at Calgary and save the trouble and expense of their transport I decided to purchase at Macleod, and so located my assistant and two men in camp there on the 30th of June and returned to Calgary myself for the remainder of my party and such supplies as I could not conveniently get at Macleod. I returned to Macleod again on the 5th of July, my assistant having been in the meantime at work looking up original corners in the town-site of Macleod, the re-marking of the block corners in the southern portion of which was the first work I was instructed to do. I gradually picked up my full complement of seven men besides assistant and cook and my complement of six horses.

Iron posts were planted at the block corners indicated on the sketch already transmitted to the Department of the Interior. They were marked with the number of the street and avenue they were intended to designate, followed by the letter "S" on the street side and the letter "A" on the avenue side. One hundred and eight of these iron posts, which are similar to those used for section corners, were planted as far back as Eighth street, and they were driven down flush with the ground. Some difficulty was experienced in locating the original block corners, as nearly every stake had been removed and the iron posts in the northern portion of the town-site had in many instances evidently been disturbed. The work at Macleod was completed on the 16th of July. Owing to a heavy rain storm, which began on the 17th, it was impossible to move to the work on the St. Mary river until the afternoon of the 19th of July. We reached the St. Mary river at the bridge two and a half miles east of Cardston on the following day, and on the 21st of July the survey of township 4, range 25 west of the 4th meridian, was begun. This township, as well as townships 4 and 5, range 24 west of the 4th meridian, which were subdivided by me, are all broken by the Blood Indian reserve. They are on the south-easterly or right bank of the St. Mary river. The land is undulating and rolling with some hilly country in the south-easterly portion of township 4, range 24. The soil is of first class quality, and the grasses grow luxuriantly. Besides the river, water may be obtained in a great many small lakes and ponds throughout township 4, range 24. The headquarters of the Brown Rancho Company are in this township, and the main trail and telephone line between Lethbridge and Cardston traverse the south eastern portion.

There is no timber in any of these townships beyond a few cotton wood and a few clumps of poplar and willow along the river lands. The survey of the township was completed on the 6th of August; we then moved camp toward the Milk River ridge to survey township 2, range 21, west of the 4th meridian, and commenced work on the 8th of August by producing the west outline 322 chains south to the north-east corner of

township 1, range 22. The portion of the first correction line forming the north boundary of township 2, range 21, was then run; afterwards the east and south outlines. The township was then subdivided.

Generally speaking the greater portion of the area contained in this township consists of high rolling and hilly country affording good grazing. It is well watered by the north branch of Milk River and numerous small ponds. The water of the river is clear and there is a moderate current. The average width of the river is about thirty links, and it is from two to four feet deep. It enters the township on the south boundary of section 6, flows in a general north-easterly course and leaves the township on the east boundary of section 13. There are a number of tracts of good "bottom lands" along this river which could be irrigated easily and rendered productive. A number of springs of exceptionally good water are to be found along the river banks and at other points. There is some excellent land in sections 30 and 31, but in my opinion the soil is generally better adapted to grazing than anything else.

The north-easterly portion of the township is pretty much broken up with deep coulees, and a high range of hills extends along both sides of the river. There is no timber in this township and only an isolated clump of willows is to be seen here and there along the river. Good building stone can be secured at a number of points along the river banks. This survey was completed on the 23rd of August and on the same day we moved camp towards Cardston about twenty miles, which place we reached on the following day. I then proceeded by the Mountain View trail to the Belly River, and I must say that I was very much surprised to see the wonderful development this section of the country has made in such a short time since its settlement. Broad fields and ripening grain, fall wheat, oats, &c., were to be seen on all sides; a good future is certainly in store for those who have settled here.

The traverse of the Belly river across sections 27 and 34, in township 2, range 28, west of the 4th meridian, was completed on the 27th of August.

Township 1, range 29, and township 2, range 30, west of the 4th meridian on the Waterton lakes and river, were the next points proceeded to. As no settlers were found in the unsurveyed portion of either of these townships, and as there was not any unsurveyed land in either of them which I consider fit for settlement, very little work was done further than to produce the north boundary of township 1, range 29, easterly across section 34, and subdivide parts of sections 33 and 34 in this township, and replace the wooden posts on the boundaries of both with iron posts. While at this work a heavy rainstorm with snow in the mountains prevailed for two days. It might be well to mention that there are settlers in the unsurveyed portion of township 2, range 29, west of the 4th meridian, and I was informed that others contemplated settling in the immediate north and north-west townships.

On the 5th of September we started for Pincer creek and arrived there on the morning of the 6th, where I decided to remain until the next day in order to get our mail.

Township 9, range 2, west of the 5th meridian, was reached on the 8th of September; my instructions were to complete the survey so far as the land was fit for settlement. I ran the west outline and fifteen miles of subdivision, leaving only the north boundary of sections 31 and 32, and the east boundary of section 31 unsurveyed. Settlers were found on sections 18 and 29. Their improvements have been connected to the survey. The northerly and westerly portions of this township are very hilly, but there is good land in the valleys. The summits of the ridges are rocky and are generally covered with a fringe of scrubby pine. Reservations for trail purposes should be made from some of the lands in this township before patents are granted, as it will be impracticable and in many cases impossible to utilize the road allowances for highways.

In township 10, range 2, west of the 5th meridian, about eighteen miles of subdivision were done, and the Old Man river was traversed through the sections subdivided. Two settlers are living in this township in addition to some of the people connected with the Walrond Rancho Company, whose headquarters are in section 12 of this township and section 7 of the township to the east. The northerly portion of township 10, range 2, like the one to the south, is hilly and rugged but there are some good tracts in the portion subdivided.

## Department of the Interior.

On the 27th of September we started from the Walrond Rancho for township 16, range 2, west of the 5th meridian, situated on Stimson creek, formerly called the south fork of Highwood river. We reached Pekisko on the 4th of October, having had a pretty hard trip on account of a severe snow storm, which rendered travelling impossible for two or three days and left about a foot of snow upon the ground. The survey of the west half of township 16, range 2, was completed on the 10th of October. There is some very good land in this township. Stimson creek flows through it from south to north, and has a branch, Sheppard (or Hay) creek from the west.

In township 17, range 3, west of the 5th meridian, sections 1 and 12 were subdivided to locate one settler, and in township 16, range 3, west of the 5th meridian about fourteen miles of subdivision were run to locate a number of settlers.

In the last three mentioned townships a large amount of fencing has been done by the large ranchers and settlers to facilitate the herding of cattle. The headquarters of the North West Cattle Company are at Pekisko. There are good tracts of lands in these townships.

On the afternoon of the 18th of October we started for the railway station at Highwood river, on the Macleod branch of the Calgary and Edmonton Railway and reached Calgary on the 21st. On Saturday, the 22nd and Monday, the 24th of October, I made arrangements for wintering my horses and storing the outfit, and having discharged a number of my party, I went by the Canadian Pacific Railway to Banff.

At Banff the block corners in the town site were permanently marked with iron section corner posts, marked as instructed. Two water lots on the south side of the Bow River at Banff were also surveyed, and that portion of the Rocky Mountains Park between its most westerly angle and Forty Mile creek applied for for grazing purposes, was also located sufficiently for a description of the lands. These latter surveys were made in accordance with your telegram of the 4th of November.

We returned to Calgary on the 28th of November, when the remaining men were paid off and the balance of my outfit was stored.

During the season only on four or five occasions were we compelled to quit work on account of rain. On the whole the season was a most favourable one so far as climatic conditions were concerned.

The only serious drawback I found in the work was its detached nature, which, of course, could not be helped, and in consequence a good deal of time was consumed in moving about and looking up old work to connect with.

Returns of survey are now in the course of preparation and will be completed in due time.

I have the honour to be, Sir,

Your obedient servant,

B. J. SAUNDERS, D.L.S.



## No. 19.

## REPORT OF A. C. TALBOT, D.L.S.

## SURVEYS IN NORTHERN ALBERTA.

OTTAWA, 25th January, 1899.

E. DEVILLE, Esq.,  
 Surveyor General,  
 Ottawa.

SIR,—I have the honour to submit the following report of my field operations during the past season in the northern part of Alberta.

In pursuance of your instructions, dated 21st May, I left Ottawa on the 25th, stopping over two days in Winnipeg to make some purchases, including tents, and arriving at Edmonton on the evening of the 1st of June.

I spent four days in Edmonton hiring men, buying horses and outfit. On the 7th June I left for the field of operations, following the Hay Lakes and the Duhamel trail. This trail, though fairly good at the time, is hilly in places and as the loads were heavy, we were often obliged to double the teams on a load, and consequently made slow progress. I reached Meeting creek on the 11th of June, where we commenced work.

Water being scarce in that part of the country, we decided to camp at the creek where there was a good supply, though of a very poor quality, and survey townships 41 and 42, range 18, before moving camp. This necessitated much travelling between the camp and the work, but this could not be avoided.

## TOWNSHIPS 41 AND 42, RANGE 18.

The land in township 42 is rolling except where it is deeply cut by the valley of Meeting Creek and a few short ravines running to the creek. The soil is very good for farming purposes, being generally a black loam from six to twenty inches in depth on a clay or sandy clay subsoil. There are small prairie openings in one-half of the township, the balance is covered with poplar brush, willow scrub, small bluffs of good sized poplar and scattered burnt timber.

Township 41 is hilly and broken, the north-east corner is deeply cut by the valleys of Meeting and Redwillow Creeks. The soil is second and third-class, the alluvial soil is sandy loam and is generally only a few inches in depth, the subsoil is a hard baked clay, very often mixed with sand, gravel and boulders. About one-half of the township is open prairie with scanty grass, the balance is covered with poplar brush, willow scrub, a few bluffs of good sized poplar and scattered burnt timber. There are a few clumps of spruce of fair size on the south slope of the valley of Meeting Creek in sections 26 and 27, and in the valley of Redwillow Creek in section 24. Meeting Creek crosses range 18, in a south-easterly direction from section 19 in township 42 to section 24 in township 41, and meanders in a valley from one-half to three-quarters of a mile in width, bounded on either side by steep hills and in many places by cut banks from fifty to seventy-five feet in height. The soil in the valley is generally very poor, being for the most part a hard baked white clay, washed from the cut banks. The valley is in places dotted with small clumps of willows and young poplar. Frequent fires in these townships have destroyed part of the timber, but enough is left for the first requirements of the settlers. At the time of the survey (June and July) there was no running water in Meeting Creek, but there was some standing in pools all along its course; it was of a very poor quality, and after a day's rain it was entirely unfit for use.

## Department of the Interior.

On 21st July, we moved camp to Redwillow Creek in township 4C, range 17, and began the subdivision of this township the following day.

### TOWNSHIP 40, RANGE 17.

This township is rolling except along Redwillow Creek, which crosses the north-west corner from section 19 to section 33 in a deep valley. Bigknife Creek also crosses the township from south to north, entering at section 5 and running north-easterly for two miles, then east for two miles and from there in a northerly direction across sections 15, 22, 27 and 34. The banks of this creek are 10 or 12 feet high from the south limit of the township to section 27 where the valley becomes wider and deeper. There was no running water in either of these creeks in the month of July, but there was a succession of deep pools of good fresh water.

The soil for about one mile and a half on the west side of the township is first-class, being a deep black loam on a clay subsoil. It is lighter and gravelly in places over the remainder of the township. Small bluffs of poplar and spruce trees up to 15 inches in diameter are to be found in the valley of Redwillow creek and in the valley of Bigknife creek in section 34. Clumps of small poplar, suitable for fence rails are widely scattered on the high land, principally on the west and north sides of the township. On the 6th of August we left for the north side of Battle river; we returned to Meeting creek and attempted to follow the creek down to the river, but when we had gone about eight miles we found it impossible to proceed any further on account of the numerous deep ravines branching from the creek valley. We therefore retraced our steps for a few miles, went around the deepest ravines and crossed the river in section 32, township 43, range 18, which is the only crossing that can be made of the river in this locality. We reached the centre of township 42, range 16 on the 9th and began work the following morning.

I had been informed that no water was to be obtained in this township, and therefore hired an extra team and waggon to haul water in casks from Battle river to our camp.

### TOWNSHIP 42, RANGE 16.

The whole of this township is rolling, about three-fourths is open and the remainder is covered with brush, willow scrub and scattered burnt poplar. There is no timber worth mentioning in this township; there was at one time a small quantity, but this has been killed by fire. The soil is all first-class, being in general a deep black loam on a clay subsoil. The grass was luxuriant all over the township at the time of the survey, and the hay meadows would supply good winter feed for a large number of cattle. Contrary to expectations, we found good water in a slough on section 32, and a spring of good cold water on the south-east quarter of section 29, but as the discovery was made as we were leaving the township, it was of no benefit to us.

On the 22nd of August, the eastern portion of our season's work being completed, we commenced work in township 48, range 26, north-east of Pigeon lake. It was very difficult to find a corner post: this portion of the country has been run over by fires at different times and is covered with dead timber, windfall, young poplars and willows; the posts have disappeared in most places and the lines are completely obliterated. We were obliged to reopen four miles of line from a section corner post in township 47, range 25, which was the nearest post to our starting point that the settlers could locate. Between the ninety miles trip with a half of one day at Wetaskiwin to purchase stores and make some repairs, and the delay caused by looking for a corner post, it was the 31st of August before we commenced our new work.

### TOWNSHIP 48, RANGE 26.

Frequent fires in this township have killed most of the timber and even the new growth in places. One-half of the township is covered with poplar brush and

willow scrub, the other half with burnt timber, windfall and scattered bluffs of green poplar of a fair size. The soil in the two northern tiers of sections is first-class, being a deep black loam on a clay subsoil; though a little inferior in the remainder of the township; it is of a fair quality for farming purposes. There is a height of land across the first tier of sections to the south of the township. The land to the south of the height of land is drained by Pipestone creek, and to the north partly by Conjuring creek, a branch of which heads in section 7, and partly by Whitemud creek which heads in section 1. About 300 tons of hay were cut in this township last summer.

## TOWNSHIP 48, RANGE 27.

Fire has at different times run over nearly the whole of this township and destroyed a large quantity of good timber. A few bluffs of green poplar and cotton-wood, up to 15 inches in diameter, are left, the best being on the west side of the township. There is also a belt of good sized spruce trees on the south side of Wizard lake in section 7. Wizard lake, a narrow sheet of clear fresh water, crosses the township from section 7 to section 1, where it empties into Conjuring creek. A large swamp, with clumps of good sized tamarack and small black spruce, runs north-westerly from section 11 to section 19. That part of the township to the north of the swamp is rolling and covered for the greater part with burnt timber, brush and scrub. There are a number of sloughs in which 300 to 400 tons of hay were cut last summer. The soil north of the swamp is first-class, being a deep black loam on clay. To the south the land is rolling along the swamp, and hilly on both sides of the lake, and is covered for the most part, with burnt timber and brush. The soil, a shallow black loam on clay or sandy clay, is fairly good though rated as second-class. We were told that a seam of good soft coal cropped out of the east bank of Conjuring creek in section 12, but we saw nothing of it as there was snow on the ground when we prospected the creek.

## TOWNSHIP 48, RANGE 28.

This is a fractional township. Fire has run over nearly the whole of it; some bluffs of good green poplar, cotton-wood and birch remain, the best being on sections 23, 24, 25 and 26. There are also a few scattered clumps of good sized spruce. The land in the northern part of the township is rolling, around Wizard lake, which heads in section 13, it is hilly, and from there to the south outline, it is nearly level and wet. The soil, a hard white clay, mixed in many places with sand, gravel and boulders is generally poor and may be rated as second and third class.

On the 24th of November, having completed the work allotted in your instructions dated 21st of May, we moved camp into township 47, range 26, and began subdividing that township as instructed by your letters of 28th September and 24th October. The portion of the township surveyed is rolling and hilly, and is covered with burnt timber, scattered bluffs of green poplar and willow brush, except on the north half of sections 9, 10, 11 and 12 where there is some open prairie. The soil is first and second class. About 150 tons of good hay were cut last summer in the sloughs along the valley of Pipestone creek. As the ground was frozen to a depth of 12 or 14 inches, we opened the lines, but did not attempt to dig pits or build mounds, and merely planted the posts in the frozen ground.

On the 10th of December we had surveyed the south outline and 15 miles of subdivision in this township, which covered all that was immediately required for settlement purposes. Snow began to fall on the morning of the 12th, and as one of our tents had been burnt a few days before, which left us with very limited accommodation for the men, I decided to cease operations for the season and accordingly left for Wetaskiwin, driving the whole distance 22 miles in a snow storm. The next day I sent the horses and transport outfit to their winter quarters at Bittern lake and paid off the men, retaining only two to assist in packing and storing the camping outfit for the winter.

I left Wetaskiwin on the 15th of December for Ottawa, stopping one day in Winnipeg on business and reported to the office in Ottawa on the 22nd. During the season

## Department of the Interior.

I surveyed 328 miles of outlines and subdivision, re-opened and remounded 43 miles of old lines and ran 29 miles of traverse, a total of 400 miles.

The tract surveyed east of Wetaskiwin was partly open and comparatively easy, but more than half of the 180 miles surveyed in the vicinity of Pigeon lake was very heavy, and the remainder was mostly through brush, scrub and brûlé.

The weather was most favourable for our work, the rainfall was very light and only a few inches of snow on the ground on the 15th of December. During the six months we were in the field we only lost nine days through bad weather.

Quite a number of settlers located in the district near Pigeon lake during the fall, over thirty squatted in township 48, range 26, and about a dozen or so picked up the choice quarter sections in township 48, range 27. As far as I could ascertain, a few will locate in the surveyed portion of township 47, range 26, before next summer.

I am much pleased to record my appreciation of the ability and good will with which my assistant, Mr. D. L. S. Fontaine, performed his share of the work during the season.

I have the honour to be, Sir,

Your obedient servant,

ALBERT CHAS. TALBOT, D.L.S.

## No. 20.

## REPORT OF J. K. McLEAN, D.L.S.

## OUTLINES AND SUBDIVISION IN THE VICINITY OF LAKE ST. ANN.

ELORA, ONT., 21st December, 1898.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to make the following report regarding the survey of township outlines and subdivision survey west of the 5th meridian in the Lake St. Ann district, west of Edmonton, Alberta, under instructions dated the 21st of May. I arrived at Edmonton on the 4th of June, leaving there on the 8th, and reaching my work on the 11th.

I first ran the north boundary of township 55, range 1, to Sandy lake, a distance of four miles, through country covered with poplar and cotton-wood.

I then ran west along the north boundary of township 55, range 2. The greater portion of this has been burnt over, and the timber killed and destroyed. Some of the dead timber is of exceptionally large size.

I then completed the meridian west of this township through timbered country very much broken by muskegs. I then ran the west boundary of township 54, range 2.

This line passes through a hilly country, heavily timbered with poplar, cotton wood, spruce and birch.

I then ran the correction line south of township 55, range 2, and north of township 55, range 2, and north of township 54, range 2, after which I completed the south boundary of township 54, ranges 1 and 2. I then commenced subdividing and completed the sub-division of townships 55, ranges 1 and 2, and townships 54, ranges 2 and 3.

## TOWNSHIP 55, RANGE 1.

With the exception of a few sections along the Sturgeon River in the southern part of this township very little agricultural land is met with. The greater portion is hilly with intervening muskegs. The high ground is covered with a thick growth of poplar and cotton wood, from six inches to twelve inches in diameter, with occasional spruce and birch, the latter being small. Small spruce and tamarack grow in the muskegs. Some of the timber has been destroyed by fire, caused largely by squatters burning the hay marshes. A large hay marsh extends along Toad Creek, in the western portion of the township, and runs along a small creek which joins Toad Creek from the east. There are also hay marshes of considerable extent around Sandy Lake on the eastern limit.

This is a shallow lake, about six miles long and from one to two miles wide, and extends northward about two miles into township 56, range 1, where another large hay marsh is found. All these marshes are cut by farmers who come some distance for hay.

## TOWNSHIP 55, RANGE 2.

The greater portion of the southern and eastern parts of this township has been burnt over, the surface being generally covered with logs and dead timber, with poplar scrub springing up.

## Department of the Interior.

The north-west portion is heavily timbered with poplar, cotton wood and spruce. A fine grove of spruce, from 10 to 18 inches in diameter, is found on sections 30 and 31. The country is very much broken by muskegs. A very large muskeg extends from Toad Lake, on section 28, north-westerly, crossing the north boundary in section 32, and running a long distance north-west, a large hay marsh, which is cut by squatters, extends around Toad Lake and runs some distance south-east along Toad Creek, the outlet. Toad Lake is very shallow and is drying up rapidly. The Sturgeon River runs through the southerly portion of the township. It is about forty links wide, about two feet deep, and has generally a stony or gravelly bottom. Coal crops out on the Sturgeon River on section 9. Some of the squatters use it during the winter, and speak highly of its heating qualities.

### TOWNSHIP 54, RANGE 2.

About one-half of this township is heavily timbered with poplar and cotton-wood from 8 to 16 inches, spruce from 8 to 18 inches, and birch from 6 to 10 inches in diameter. In the marshes willows of exceptionally large size are found. It is generally hilly in the bush. The eastern part has been burnt over, a large hay marsh runs along a small creek in sections 3 and 4. There are also a number of smaller marshes. Squatters have settled near these marshes, and go chiefly into cattle raising. However, there is not hay enough for any large number of cattle.

### TOWNSHIP 54, RANGE 1.

The south limit of this township was run. The township is situated among the Blue Hills and is exceptionally rough and hilly. The hills are from 100 to 150 feet high with intervening ravines, and are generally heavily timbered.

### TOWNSHIP 54, RANGE 3.

This township is generally hilly, with heavy poplar, cottonwood and spruce timber; a considerable portion has been destroyed by fire. A large hay marsh, which is cut by people living in the Lake St. Ann settlement, extends around Muskeg Lake on section 7 on the west limit of the township; another marsh follows along the Sturgeon River on sections 35 and 36. The hay on this is also cut by squatters. Very little of this township is suitable for growing grain. A very small area in any of these townships is suitable for grain purposes. Any grain seen last season was very poor, owing probably in part to the extremely dry season. We were obliged to carry water on the line from the last of July until snow came about the middle of October, when about 8 inches fell. In the bush this snow remained and settled down to about 4 inches, in the open it, however, all disappeared by the 1st of November.

A few squatters are scattered through these townships, and around Lake St. Ann there is a considerable settlement of Half-breeds, but beyond growing a few potatoes and raising some cattle and horses, not much attempt is made at farming. They depend largely on the white fish in Lake St. Ann for a living.

I do not think any large number of cattle could be raised and kept as the few hay marshes within several miles are now hunted out and cut for the small number of cattle in the country. Even where burnt over no large amount of good feed for summer grazing seems to come up. It is the exception to come across any extent of wild peas or vetches. In all these townships a good deal of the timber has been destroyed by fires, caused largely by burning the hay marshes. Some of the squatters do not seem to care how much timber they destroy. Last season I came across a marsh which had been set on fire a few days prior to my seeing it. As the season had been very dry, not only was a considerable area of timber killed, but the marsh itself was rendered almost useless, the greater portion of the upper soil being burned off. If the timber could be preserved these townships would be more valuable in the future if left as they are.

I have the honour to be, Sir,

Your obedient servant,

J. K. McLEAN, D.L.S.

## No. 21.

## REPORT OF C. C. DuBERGER, D.L.S.

## SURVEY OF MERIDIAN EXTERIORS AND SUB-DIVISION IN ALBERTA.

WATERLOO, P.Q., 22nd December, 1898.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—According to your instructions I have the honour to submit the following report of the surveys I performed during the last season.

Your instructions dated the 20th of May last were received on the 23rd of same month and without delay I began to prepare for a long absence, and left my home seven days afterward, the 30th, for Edmonton.

When stopping at Winnipeg on the 2nd of June, for about an hour, I went to the Manitoba Cartage Company's office, in order to have the necessary iron posts forwarded to my address at Edmonton, but as I reached Winnipeg after 18 o'clock I was not surprised to find the office closed, and not wishing to delay 24 hours, I wrote a letter, in which I inclosed your order for iron posts, to the Company, asking them to ship the posts without delay.

I was in Calgary early on the morning of the 4th and was obliged to remain there until the 6th, having money to draw from the Bank of Montreal, and the train for Edmonton having left at 8 o'clock. The next train left on Monday, the 6th, and I arrived in Edmonton at night. The next morning I began the organization of my party; four days were spent doing the work. I would have been ready to leave for the field of my operations on the 11th, if the iron posts expected from Winnipeg had arrived. An answer to a telegram from the Manitoba Cartage Company, received the 13th, informed me that the posts had been shipped on the 3rd. On being told by merchants of Edmonton that I need not expect the posts before a fortnight, I decided, as I was to spend the summer not far east from Edmonton to leave for the work, with the intention of coming back for the posts at such time as I believed they had arrived. On the night of the 14th I was in consequence, camping about five miles east of Edmonton on my way to Cooking Lake. Rough trails and heavy loads did not permit of quick travelling. Settlers informed me that there was no trail passing near the north-east corner of township 52, range 22, where I wanted to begin work, and not being able to go to this corner otherwise than by a trail on account of the bush, I made my way to the north-east corner of section 33, township 51, range 22, near which place I camped on the 16th June, and in the afternoon connected by a line this corner with the north-west corner of the section in order that the next day I could begin to produce eastward the north boundary of township 51, range 22.

Having produced this line, which runs through a hilly, rolling and undulating country covered with green timber mixed with brulé, I made my way out to the 14th base, from which I surveyed the meridian between ranges 21 and 22, west of the 4th meridian to the 13th correction line. This line runs through Cooking Lake and intersects its north shore in section 25, township 51, goes across Koney Island and leaves the lake in section 13. On the north side of Cooking Lake it runs through a rolling and undulating, half-burned country, interspersed with islands of green poplars, mixed with spruce, growing on a second-class soil. On the south side it enters a hilly country thickly covered with poplar, averaging eight inches in diameter, the soil being 1st and 2nd class. Then I proceeded to open out easterly the north boundary of township 51, range 21, over an undulating surface bearing half burned poplars and a growth of young

## Department of the Interior.

poplars ; it enters Cooking Lake in the eastern part of section 34, and crosses an island in section 35. The soil on both sides of this outline is classified as second-class. I then ran the meridian between ranges 20 and 21, from the 14th base to the 13th correction line.

It crosses a large bay of Cooking Lake, the north shore of which is in section 1, township 52, and its south shore in section 36, township 51, the north-east corner of the latter township being in Cooking Lake. It also runs through the western end of Hastings Lake in sections 24 and 13. On the north side of Cooking Lake it passes through rough, half-burned bush, young poplars, windfalls, a rolling and hilly country ; the soil although found to be second-class, would be difficult to cultivate on account of its surface being so broken. On the south side of the lake it enters burned and green poplars, growing on an undulating ground as far as Hastings Lake, then to the correction line over broken hills, thick bush and windfalls, the soil being here 1st and 2nd class.

I had still another meridian to survey, the one between ranges 19 and 20, from the 14th base to the 13th correction line. This was done after having produced westerly what was remaining unsurveyed of the north boundary of township 51, range 19, from the north-east corner of section 35. I will not make any remarks here in regard to this line, as farther on I will report on the subdivision of townships 51 and 52, range 19. The greatest part of the last mentioned meridian runs through a very rough, hilly and half-burned country with young poplars, scrub and willows growing through heavy windfalls.

The soil along this boundary is 2nd class and 3rd class.

The 16th day of August I began subdividing. After having worked a few days in township 51, range 19, I went on the subdivision of township 52 in the same range, still I did not get through it without working again in township 51.

The 27th of August, while at work in the last mentioned township, one of my men, George W. Pambrun, met with an accident that, at first, did not appear to be very serious ; he cut one of his feet badly with an axe and was for two weeks unable to do anything. By the 12th of September the wound seemed to have healed and he worked a whole week ; but he should have delayed several days more, the fact of walking before being quite healed caused the wounded foot to swell ; on the 2nd of October seeing that he was not getting better and that he would be unable to go back to work this season, I thought it better to discharge him.

Township 52 was visited by fires several years ago. It is broken by numerous hills, marshes and lakes and it is covered nearly everywhere with half-burned standing and fallen trees, mixed here and there with green poplar bush and a new growth of poplar and scrub. Other fires great enough to clear off this township would make it, I believe, a good pasturing country.

The soil, although 2nd class, would be difficult to cultivate on account of being so broken.

Township 51 of same range, which was partly subdivided, offers better country ; a great part of it could with very little work be made good agricultural land, where all the timber required for fuel, fencing and even buildings could be obtained.

The survey of the outlines and subdivision of these two last townships was a tedious work begun on the 28th July and finished only on the 10th of October. On this last date I camped at night in section 24, township 51, range 21. The next day I left for Edmonton in order to get supplies and engage a labourer, and on the 13th I was back at camp. On the 14th I was working at the subdivision of the last mentioned township. The part that I subdivided, that is its northern part, is generally undulating, where good land may be found, the soil being second-class. Along the shore of Cooking Lake which occupies a large part of this township, hay grows in abundance.

I also subdivided a part of township 52 in range 21, the surface of which is scattered with lakes of different sizes ; seven of them were large enough to be traversed. Sections 1, 2, 3, 10, 11 and 12 are broken by Cooking Lake.

This township is rolling and half-burned ; green poplars in considerable quantity were seen in its south part. Another large fire would leave good lands, the soil being 2nd class.



The fact of working all summer in a very wet country caused me to suffer from rheumatism by the beginning of October, and as I got worse I was obliged to give up work on the 9th November, although I wished very much to finish the subdivision of township 52, range 19.

The next morning I left for Edmonton and arrived there on the 11th. On the 12th I made arrangements with Mr. Hercule Plante, from Beaumont, for the wintering of six horses, five carts, and one buckboard. Receiving a cheque from the Department on Monday, the 14th, I discharged my party the next morning, and left for home by the first train.

I have the honour to be, Sir,

Your obedient servant,

C. C. DuBERGER, D.L.S.

# Department of the Interior.

No. 22.

REPORT OF J. E. ROSS, D. L. S.

SURVEYS IN RAILWAY BELT, BRITISH COLUMBIA.

NEW WESTMINSTER, B.C., 16th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to submit the following report on the surveys performed by me during the past season in the railway belt in the province of British Columbia.

On the 31st of May, a few days after the receipt of your instructions, I left New Westminster to commence the season's operations in township 22, east of the coast meridian. The work in this locality consisted of a partial subdivision of the above township and the adjoining townships 19 and 25. The portion surveyed comprises a strip about a mile and a half wide running south-westerly from the Soo-wah-lie Indian reserve at the north-east corner of township 22, to the international boundary and includes Cultus lake, which is three miles long and one mile wide. On both sides of this strip the country is mountainous. In the portion lying between the lake and the Indian reserve there are several quarter sections of alder lands, suitable for settlement. The rest of it is stony and gravelly and unfit for cultivation. On both sides of the lake the mountains closely approach the water, and in places the shore is rocky and precipitous. At the south end of the lake there is a quarter section or two of good bottom land. From here the ground rises steeply towards the south and is much broken. The most of sections 5, 6, 8 and 9, township 22, is bench land, suitable for settlement. The soil is good sandy loam. In some parts water is not obtainable, but along the foot of the mountains there are numerous springs and creeks.

The timber around the lake and on the part lying to the north of it is not valuable, being burnt and of a poor quality. The part south of the lake was originally heavily timbered with fir and cedar, but the most of it has been swept by fire. There are still several small tracts of good timber. The largest one, on which the timber will exceed 50,000 feet to the acre, lies in sections 4 and 5, township 22. Ten squatters have settled on these lands, but half of them were not living on their claims at the time of survey. Those absent were engaged earning money to support themselves while improving their claims. This is necessary in the case of settlers commencing on bush farms without money. The improvements made are small but represent a large amount of work. I expected to find the settlers discontented, but on the contrary I found them all well pleased with their lot. There is land enough here for a few more settlers but only those should come who have been accustomed to bush life and are able to do hard work. The roads from the settlement lead to the south of the international boundary and, in consequence, the settlers are obliged to do all their trading on the American side.

At the point where I reached the international boundary the line has not been run. Two lines have been run from Sumass mountain on the west; the one upon which the iron monuments were placed runs partly across the valley, the other, which bears to the south and is evidently wrong, runs entirely across. This has been the cause of some trouble among settlers as well as to surveyors. The work of the survey was rather tedious on account of the thick brush, large timber, which is fallen in places and two tiers deep, and turned-up roots, ten to twenty feet in diameter. Although I made use of every device I could think of to avoid unnecessary cutting in order to expedite the work, half a mile of line was a fair day's work.

On my way out from here I made a small survey in township 3, range 28, west of the 6th meridian. The work consisted of a traverse of part of Cheam lake and laying off a few sections between the lake and Cheam mountain. The ground is partly level and partly rolling, and timbered with fir, cedar and hemlock. All the valuable timber has been taken off by loggers. The soil is fairly good. Around the lake the land is low and boggy and covered with brush. All the land surveyed has been taken up or applied for.

On the completion of the work in this locality, I proceeded to Sumass mountain, where I subdivided parts of townships 19 and 20, north-west district. This part of the mountain approaches an elevation of 1,000 feet. It is pretty evenly divided into broken, rolling and level land. The timber, in general, is not heavy. The soil is second-class, and well watered with numerous small streams. There is a good road through the land surveyed to the steamboat landing on Fraser River. There is a small settlement along the road, and suitable land for a few more settlers.

From the Sumass mountain I proceeded to Spence's bridge, where I made a traverse of Thompson River, in township 17, ranges 24 and 25, west of the 6th meridian. The section lines were surveyed some years ago, but a traverse of the river was necessary to obtain the areas. The country was so open that very little cutting had to be done. The only difficulty that presented itself was in finding the corners of the provincial lots. The wooden posts by which the corners were marked had disappeared. Since making the traverse a landslide has taken place, and if it is of the same proportions as the one which occurred at the same place some years ago a few of the areas will be affected considerably. From here I went to a point about ten miles south-east of Savona on the Canadian Pacific Railway, and made a survey southerly to the south limit of the railway belt. The survey comprised a partial subdivision of township 19, ranges 20 and 21, townships 17 and 18, ranges 21 and 22, west of the 6th meridian. From the starting point to the divide between the waters flowing into Thompson and Nicola Rivers, a distance of three or four miles, the ground rises gradually and is very rolling, with open timber. The top of the divide is a gently rolling plateau, three miles wide, with numerous small lakes and wild hay meadows, the latter varying in extent from five to twenty acres. On the south side the country is rolling and more thickly timbered. Along the creeks and lakes there is considerable meadow land. Excepting the meadows the soil is a sandy gravel. General farming cannot be carried on successfully as the land is high, and situated in a dry locality. The country is specially adapted for stock-raising. The extent of grazing lands is almost unlimited. The chief difficulty is in securing sufficient hay lands to produce feed enough for the stock during winter. The few settlers located here are apparently making an easy and comfortable living. They have taken up the choicest meadows, but numerous small ones remain untaken. This place is a favourite resort for sportsmen. Deer were not very plentiful at the time of survey, but the small lakes were literally covered with ducks and geese. On finishing the survey here I proceeded to a point about fifteen miles south-east of Kamloops, where I made a subdivision of parts of townships 17 and 18, range 16, west of the 6th meridian.

The character of the country is somewhat similar to that of the last place of survey. It is rather more hilly and broken with heavier timber, and there is a proportionately greater extent of water and meadows. The meadow land is what is most particularly sought after at present.

Applications to purchase have, I understand, already been sent in to the land office. One great advantage of surveying here in winter is that the lakes can be traversed on the ice.

On the 29th day of December I finished the survey here, and quit field operations for the season.

I have the honour to be, Sir,

Your obedient servant,

JAS. E. ROSS, D.L.S.

# Department of the Interior.

No. 23.

REPORT OF J. S. DENNIS, D.L.S.

GENERAL IRRIGATION SURVEYS.

REGINA, 5th January, 1899.

E. DEVILLE, Esq.,  
Surveyor General,  
Ottawa.

SIR,—I have the honour to forward herewith the report of Mr. A. O. Wheeler, D.L.S., regarding the general irrigation surveys during the season of 1898, carried on under his immediate charge and in accordance with instructions issued to him from this office, together with the reports addressed to Mr. Wheeler by Mr. R. W. Macintyre, C.E., and Mr. J. T. Child, C.E., who respectively had charge of parties Nos. 2 and 3 engaged on irrigation surveys during the season. The character of the work which has been performed and the methods of carrying on the different classes of the work are dealt with very fully in the reports forwarded herewith, but one or two points in connection therewith are deserving of some additional notice.

The primary triangulation and photographic work upon which Mr. Wheeler has been personally engaged since the inception of the irrigation surveys was, as has been explained by him, extended during the past season over a further considerable portion of the eastern slope of the Rocky Mountains and adjoining foothills country forming the main watershed of the western portion of the Territories, and the indications are that two more seasons' work will extend operations south to the international boundary, and thus permit of a complete map of this area being prepared. The importance of a map of this kind is probably only realized by those who have given some attention to the question of the water supply available for irrigation in the western portion of the Territories, but I may say that upon a correct knowledge of the contour and forest conditions of this watershed is dependent to a great extent the future of the larger irrigation works which are required to reclaim the extensive areas now awaiting the transforming influence of water in the plains region to the east of the watershed. The value of this branch of the irrigation surveys will, of course, be immensely enhanced by the reservation of the timbered areas which the surveys disclose upon the watershed or upon the adjoining foothills, and it is gratifying to note that the Department realizes the importance of this branch of the work by arranging to reserve these forested areas so as to maintain and improve the present value of the watershed.

The surveys performed during the season by party No. 2 under charge of Mr. R. W. Macintyre, C.E., were prosecuted with the object of filling in the blocks, which had been outlined during the previous season's operations, by lines of levels so as to permit of an accurate contour map of these areas being prepared. The methods and instruments employed upon the work during the past season were, as far as I know, new in Canada, and it is therefore pleasing to be able to say that, from the results obtained both in the field and in the office, it is evident that the instruments and system adopted have provided information which will permit of a very fair contour map being prepared of the area covered by the season's operations at a cost much below any of the other systems commonly adopted in carrying on work of this character.

The location of suitable sites in eastern Assiniboia for the storage of water in reservoirs, which was the object of the operations carried on during the season by party No. 3 under Mr. J. T. Child, C.E., was a continuation of the work commenced during the previous season.

The 8 reservoir sites located by Mr. Child together with the 6 located during the previous season will probably be found sufficient to meet the present requirements in improving the water supply for domestic and stock watering purposes, and no further work of this character will be needed next season.

The importance of this branch of the work may be indicated by the statement that the locations which have been made of some of the reservoir sites have demonstrated the feasibility of settling portions of country which have been so far looked upon as unfit for settlement, owing to the absence of water in the small streams or swamps during the late summer months and the impossibility of obtaining water at a reasonable depth in wells. The construction of some of the dams to create these reservoirs on the sites located is now receiving consideration by the Territorial Government, and the work of this branch of the irrigation surveys will thus be of immediate benefit to the country as a whole.

It is fitting that in concluding this report some reference should be made to the value of the work performed by the irrigation surveys staff during the past seasons, as illustrated by the adoption during this season by the Alberta Irrigation Company of the St. Mary Irrigation Canal scheme, proved feasible by our investigations and the preliminary location of that canal in 1896. The location of that canal was undertaken as part of the general surveys to prove the location and extent of the areas which could be irrigated by water diverted from the St. Mary river and carried to areas in the Lethbridge district which promised favourable results from the application of water. The Alberta Irrigation Company has taken up the scheme and commenced the construction of the canal, and the expenditure upon this undertaking is expected to reach nearly half a million dollars. The undertaking is destined to have a very important bearing upon the future development of that portion of the Territories, and it is particularly gratifying to note that Mr. George G. Anderson, C.E., of Denver, Colorado, chief engineer of the company, and one of the best known authorities on irrigation engineering in the United States, has in completing the detailed surveys for the company, adopted our location for the intake and line of the main canal throughout a considerable portion of its length.

The staff of the irrigation surveys is now engaged in completing the maps, plans, statements and schedules needed to more thoroughly illustrate the season's operations, and it is hoped to have this data in shape at an early date to permit of a full and detailed report being prepared to show the completed work to date.

I have the honour to be, Sir,

Your obedient servant,

J. S. DENNIS,  
*Deputy Commissioner of Public Works.*

# Department of the Interior.

No. 24.

REPORT OF A. O. WHEELER, D.L.S.

IRRIGATION SURVEYS.

DEPARTMENT OF THE INTERIOR,

IRRIGATION SURVEYS OFFICE,

CALGARY, 1st December, 1898.

J. S. DENNIS, Esq.,

Deputy Commissioner Department of Public Works,  
Regina, Assa.

SIR,—Under date 23rd of May, 1898, I was directed by the Surveyor General of Dominion Lands to report to you at Regina and receive instructions to proceed with irrigation surveys during the present season.

In accordance with the instructions given me by you at Regina on the 30th of the same month, I proceeded to Calgary, and took charge of the irrigation surveys office and staff at that place, immediately commencing to organize the survey parties and other work detailed to me when at Regina, and in your general instructions, dated 7th June. The work of the past summer and autumn may be briefly outlined under the following heads :—Surveys, hydrographic records, ditch inspection, and office work.

## SURVEYS.

Party No. 1.—This party was directly under my personal supervision. Its work comprised the extension southward of the photo-topographical survey of that part of the foothills region which forms a large and important portion of the Alberta watershed, the projection over the area covered by the season's operations of the primary triangulation, previously commenced in the Bow river valley, and the completion of the measurement of a base, selected in September 1897 in the Ings plat on the north side of Highwood river.

Work was commenced at the primary triangulation on the 27th of June and continued until the 13th of July.

On the 14th, the measurement of a base, to fix the scale of the survey and check the triangulation was taken up. The location was selected in September 1897, in sections 20, 21, 28 and 33, in township 18, range 3, west of the 5th meridian on the flat a short distance above Ings Bros' ranche, north side of Highwood river, when a preliminary measurement was made.

This season posts were planted solidly at intervals of 100 metres (328.09 feet) and carefully aligned in grades suitable to the conformation of the ground. Two measurements were made with a 100 meter tape; one with a 30 lbs. pull, at temperatures ranging from 49° to 74° Fahr. and the other with a 20 lbs. pull at temperatures ranging from 53° to 69° Fahr. The final reductions have not yet been received from the office of the chief astronomer of the Department, where the data have been sent for computation. Base measuring was completed on the 30th of July.

Primary triangulation work, expanding from the base, and ditch inspection occupied the time until August the 16th.

From the 1st of July, our old enemy, smoke from bush fires in the mountains, had been strongly in evidence, but had not been sufficiently dense to interfere with base measuring or with the short sights required for base expansion. It was now found

impossible, owing to this cause, to continue the triangulation or photographing, and it was decided to proceed up Cataract Creek, a tributary of Highwood River, to the divide between the waters flowing to that stream and the north-west branch of Old Man River and make a micrometer traverse southward along the latter stream.

A camp was established on the divide mentioned, but an inspection of the country made it apparent that a micrometer traverse would be a work of great labour and small results, owing to the dense growth of timber covering the surrounding country. This section of the foothills, lying between the Highwood and Highrock ranges, and reaching almost to the summit of the Rockies is of vast importance from an irrigation point of view. Covered by a dense growth of spruce, pine and tamarack, as yet scarcely touched by fire, it furnishes admirable facilities for preserving and gradually distributing the precipitation of the wet months, and no effort should be spared to preserve it intact.

Owing to the importance of the section and the desirability of being able to define accurately these timbered areas, it was decided to make a camera survey at short range, although the method would entail the occupation of a much larger number of camera stations than would be necessary in clear weather, the landscape at that time not being distinct for a greater distance than three or four miles.

Work on the north-west branch of Old Man River was concluded on the 3rd of September and a similar survey conducted along the valley of Livingstone River (or north branch of Old Man River). Here the survey was carried about fifteen miles south from the head of the stream and extended westward to close in upon the work done upon the north-west branch.

On the 24th of September, I received your telegram delivered by a Blackfoot Indian on Sentinel Mountain, requesting me to meet you at Calgary.

As the weather was stormy and the smoke still a hindrance to photographic work, I instructed my party to come in, intending to reduce its strength and make an attempt to continue the primary triangulation later on, when the customary September snow storm had dissipated the smoke.

In accordance with your instructions received when at Calgary, I called in and paid off party No. 2, and at the same time reduced party No. 1, to two assistants and a cook.

On the 12th of October, the party of four went south and made an attempt to complete the primary triangulation over the area covered by the past two seasons' topographical work. Only three stations could be occupied. A series of snow storms set in, followed by high winds, and as a sequence flying snow, rendering angle reading impossible along the western side of the triangulation ladder, the one nearest the mountains. On the 3rd of November, the attempt was abandoned and the party returned to Calgary, and was paid off.

The work done may be summarized as follows:—

Primary stations occupied, . . . . .	10,	angles read . . . . .	87
Secondary do . . . . .	15,	do . . . . .	170
Camera do . . . . .	42,	views taken . . . . .	189

Party No. 2.—The work of party No. 2, comprises a topographical survey of the more level portion of the arid district, where irrigation works are now in force and are capable of being applied. The object in view is to obtain sufficient detail within the blocks of which the boundaries have already been accurately levelled to enable a complete contour map to be made, on which can be shown the irrigable areas and their relation to the various sources of water supply. It is also desired, by the means employed, to connect the topographical survey of the foothills region with that of the plains areas, where the elevations become too low and the contours insufficiently marked to render photographic methods available.

The party was placed in charge of R. W. Macintyre, C.E., who has been for several years employed upon irrigation surveys. In addition to the chief, it consisted of a topographer, a rodman, a teamster and a cook, with the necessary transport and camp equipment. The instruments employed were a gradient telemeter level, an ordinary Y level, a three inch tripod compass, a prismatic compass, the aneroid baro-

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meter, hand level and odometer. The party was engaged upon the work outlined from the 16th of June to the 7th of October, and covered an area of 776 square miles.

In addition to the above Mr. Macintyre made surveys at High River village for the purpose of diverting the channel of Highwood River from its present course, where it now makes serious inroads upon the village lands during each spring freshet; he also surveyed, at the same place, a canal to divert 50 cubic feet of water per second from Highwood River in the channel of Little Bow River, with a view to insuring a constant flow of water in the latter stream.

A detailed report from Mr. Macintyre of his season's operations is attached hereto.

Party No. 3.—Mr. J. T. Child, C. E., was placed in charge of party No. 3.

The principal work undertaken consisted of a preliminary topographical inspection for the purpose of locating the most suitable points for storage in reservoirs of the spring and freshet discharges of the streams and coulées situated within the district of his operations, so as to increase the present water supply for domestic and stock watering purposes. It was desired that he should examine the different streams and defined drainage channels with a view to determining the most suitable points on these lines where run-off could be stored by the erection of dams.

The district in which he carried on his season's operations is contained within that portion of eastern Assiniboia lying to the east of Qu'Appelle river, north of township 10 and west of the second meridian.

The party was organized at Regina. In addition to the chief, it consisted of an assistant, a rodman, a teamster and a cook, together with the necessary transport and camp equipment.

The work was performed by travelling along each stream or drainage channel until a suitable site for a reservoir was found. The position for the dam to create such reservoir was then located and sufficient information obtained to enable a report to be submitted of the dimension, the cost of construction and the facilities for obtaining the material required.

A compass traverse of the proposed reservoir was then made, and a tie effected with the lines of the lands surveys system, so that the position of the site could be shown upon our maps of record. For each reservoir site located, levels were taken to enable, in conjunction with the compass traverse, an approximate estimate to be made of the capacity. At the same time permanent bench-marks were established, to be used to tie in the levels taken with the block outline levels, when the same should be extended to the section of country in which operations have now been carried on. If water was found running in the channel which was to be dammed, the actual flow at the time of survey was determined by measuring the velocity with a current meter, and a cross section of the channel was carefully obtained. Highwater and flood elevations were also determined from existing indications, so that the discharge at these stages might be calculated; for this purpose the fall of the bed of the stream was ascertained for half a mile above and below the points of cross-section.

The instruments used were as follows:—A Y level and sixteen-foot rod, 3-inch compass and tripod, Lallie current meter, hand level, 100-foot and 66-foot steel band chains.

In addition to the above work, Mr. Child made surveys of the dams until recently existing on the Qu'Appelle river at Fort Qu'Appelle and Katepwe, to permit of proper designs being prepared for their re-construction. He also made the necessary surveys for the construction of a dam on a tributary of Cussed creek in the Yorkton district, with the object of diverting the flow from this stream to certain lakes lying to the south and south-east of the point at which it is proposed the dam should be constructed, and thus to fill up the lakes and improve the water supply of the district.

A detailed report from Mr. Child of the work accomplished by him during the season is appended hereto.



## HYDROGRAPHIC RECORDS.

*Nilometers.*

Three nilometers were in operation during the season. They were used to record automatically the rise and fall of the streams upon which they were placed.

No. 1 was attached to the Langevin traffic bridge across the Bow river at Calgary; No. 2 on the Elbow river traffic bridge at Calgary; No. 3 on the traffic bridge across the Highwood river, at High river village. Nos. 1 and 2 were in charge of Mr. C. D. Rickards, of the Calgary irrigation surveys office, and while he was absent on his holidays they were in charge of Mr. G. E. Jacques, of Calgary; No. 3 was attended to by Mr. Samuel Heslip, blacksmith at the above village.

The machines run for seven days without attention, at the end of which time the record sheets require to be changed, and the clocks wound. A gauge rod, the elevation of which, referred to sea level, has been ascertained, is read daily in connection with the meter, and serves the double purpose of checking it, and enabling the level of the stream to be ascertained at any time during the period when the meter is in operation. By taking a cross-section of the stream at the point where the nilometer is set, and measuring the velocity with a current meter at various stages of level, throughout the months when the river is open, a very fair estimate of the flow at any time may be obtained. Further, by taking levels up and down stream from the point where the cross-section is taken, a sufficient distance to ascertain the slope of the bed, a fair approximate of the volume of water passing may be obtained for any level recorded by the nilometer. The nilometers in use were manufactured by J. S. J. Lallie, of Denver, Colorado. They are somewhat crude in construction and might readily be made to yield better records. I understand that there is a Toronto firm willing to undertake the manufacture of these instruments upon an improved pattern, and would suggest that the firm be given an opportunity with the next nilometers that may be required. It is claimed that the instruments can be manufactured as cheaply in Toronto as in Denver.

There are a number of streams upon which nilometers should be placed in the near future; particularly on the south branch of the Saskatchewan, St. Mary, Old Man, Belly and Waterton rivers. I would urge that they be placed upon the three first mentioned during the coming spring, in time to record the spring freshets.

The nilometer records obtained during the year will be plotted, and will appear in the next general report on irrigation, and irrigation surveys.

*Gauge Rods.*

The records obtained from the readings of gauge rods placed on streams throughout portions of Assiniboia and Alberta, have on the whole proved a success. Unfortunately the system was not in working order early enough in the spring, owing to my late arrival at the Calgary office, to enable the fullest value to be obtained from these records. It is hoped that next spring all will be in readiness to record fully the high water and flood stages of the streams upon which the rods have been placed.

The majority of the readings were taken by section foremen along the lines of the Calgary and Edmonton and Canadian Pacific Railways, and by sergeants of the North West Mounted Police Force in charge of outlying detachments. For their services we are indebted to the courtesy of the Superintendent of the North-West Mounted Police Force for the Macleod district, and to the Superintendents of the railways named.

Below is given a list of the streams upon which gauge rod readings have been taken during the past season, together with the location of the rods, the names of the observers, the intervals of reading and the period over which the readings extend.

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### LIST OF GAUGE RODS READ DURING THE YEAR, 1898.

#### ALONG THE LINE OF THE CALGARY AND EDMONTON RAILWAY.

Name of Stream.	Location of Rod.	Name of Observer.	Interval of Reading.	Period of Reading.
Willow Creek...	Railway Bridge.	Geo. Wansborough, section foreman, Macleod, W.	Each 2nd Day..	Part June, July, August, Sept., Oct.
North Branch, Mosquito Ck..	" " ..	Thomas Field, section foreman, Nanton.	Daily.....	Part June, July, August, Sept., Oct.
South Branch, Mosquito Ck..	" " ..	Thomas Field, section foreman, Nanton.	" .....	Part June, July, August, Sept., Oct.
Sheep River ....	" " ..	J. C. Bradford, section foreman, Okotoks.	" .....	Part June, July, August, Sept., Oct.
Nose Creek.....	" " ..	John Galbraith, section foreman, Calgary.	" .....	Part June, July, August, Sept., Oct.

#### ALONG THE LINE OF THE CANADIAN PACIFIC RAILWAY.

Name of Stream.	Location of Rod.	Name of Observer.	Interval of Reading.	Period of Reading.
Maple Creek...	Railway Bridge.	Geo. Bell, section foreman, Maple Creek.	Daily except Sunday.	August.
Fish Creek, Aasa	" " ..	Geo. Bell, section foreman, Maple Creek.	Daily except Sunday.	"
McKay Creek...	" " ..	John Flood, section foreman, Walsh.	Daily.....	Part June, July, Aug. and part of Sept.
Box-elder Creek.	" " ..	John Flood, section foreman, Walsh.	" .....	Part June, part Aug.
Piapot Creek...	" " ..	P. Batter, section foreman, Colley..	" .....	Part July, Aug.
Swift Current Creek .....	" " ..	A. Janson, section foreman, Swift Current.	" .....	Part July, Aug.
Seven Persons Creek .....	" " ..	W. Maughan, section foreman, Medicine Hat.	" .....	Part July.
Bullhead .....	" " ..	W. Maughan, section foreman, Medicine Hat.	" .....	Part July, Aug., Sept., Oct.
Ross Creek.....	" " ..	W. J. Corbett, section foreman, Irvine.	Daily except Sunday.	July, August, Sept., Oct.

NOTE.—Most of the streams above named carry a quantity of water only in the spring and dry up during the summer, this fact will account for the readings not being carried beyond the month of August. For the reason before given, records of the early spring months were not obtained.

## OTHER GAUGE RODS.

Name of Stream.	Location of Rod.	Name of Observer.	Interval of Reading.	Period of Reading.
Bow River.....	Langevin traffic bridge at Calgary.	C. D. Rickards, Irrigation Surveys Office, Calgary.	Daily except Sunday.	June, July, Aug. Sept., Oct., Nov., and in Dec. each 2nd day.
Elbow River....	Traffic bridge at Calgary.	C. D. Rickards, Irrigation Surveys Office, Calgary.	Daily except Sunday.	June, July, Aug. Sept., Oct. and Nov.
Highwood River	Traffic bridge, High River village.	Samuel Heslip, blacksmith, & co., High River.	Daily.....	Part June, July, August, Sept., Oct.
Old Man River .	Traffic bridge, Macleod West.	Geo. Wansborough, section foreman, McLeod, West.	" .....	Part June, July, August, Sept., Oct.
Fish Creek, Alta	Traffic bridge, Cal. and Macleod trail.	John Galbraith, section foreman, Calgary.	" .....	June, July, August, Sept. and Oct.
Pincher Creek..	Traffic bridge near the village.	P. Bertles, Sergt. N. W. M. P., Pincher Creek.	" .....	June, July, August, Sept. and Oct.
St. Mary River..	At N. W. M. P. Detachment Colles.	G. S. Cotter, Sergt. N. W. M. P., Colles.	" .....	August, Sept. and Oct.

There were twenty-one gauge rods in operation during the summer. There should be a much larger number, and it is intended early next spring to get several more placed at points where the records obtained will be of value.

A few of the gauge rods have been tied on to the general system of levels; all should be so connected, and cross-sections of the streams and slope of bed ascertained, as well as measurements of velocity where it is possible, to enable estimates to be made of the flow for any time during the period when the streams are open. Pressure of other work, and a small staff, prevented this being done during the past season.

The gauge rod records when plotted, will appear in the next issue of the general irrigation report.

## EVAPORATION.

Two evaporation pans were attended to by Mr. C. D. Rickards, from the time of their establishment in June until steady frost set in in October.

No. 1, an earth pan, was placed outside Mr. Rickards' house, to be convenient for taking records.

No. 2, a water pan, was set in the Eau-claire Mill Company's pond.

From the former a complete record of daily readings was obtained. The latter was not a success; the location is a poor one, being too easy of access to the public and subject to considerable differences of elevation of the water, owing to the pond being alternately filled and emptied as required for mill purposes. It is desired next year to change the location of the latter, if a more suitable place can be found. It is also desired to extend the scope of the work by placing tanks in one or more reservoirs or small lakes, and another earth pan at a considerable distance from Calgary.

The readings were taken on a hook gauge to thousandths of a foot. At the same time, the temperatures of the water and of the outside air were recorded and notes made of the prevailing weather throughout the day. The results will appear in the general report on irrigation.

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### CROSS-SECTIONS.

Cross-sections were made of the Bow and Elbow rivers at the same time the nilometers and gauge rods were set in operation.

On the Bow, the cross-section was made from the Langevin bridge, and on the Elbow from the railway bridge, a few hundred feet above the traffic bridge where the nilometer and gauge rods were set. Current meter measurements for velocity were taken at the same time, and sufficient data obtained to compute the flow.

One other cross-section was made on Pekisko Creek (middle fork of Highwood River), about six miles from its source; measurements to compute the flow were also obtained.

### RATING STATION.

The June floods of 1897, and high water of 1898, had considerably impaired the platform and guarding piles of the rating station of the Eau-claire Mill Company's pond. Some time was spent in the spring re-levelling the platform, re-gauging the track and straightening and temporarily strengthening the fender piles. It is proposed during the winter to have these piles driven securely. Owing to the damage done, it was found impossible to utilize the chronograph and electric clock for rating the meters, the system established in the spring of 1897 having been disorganized.

In the system referred to, the rails had been used as part of the circuit. On account of the clumsy motion of the car and difficulties in making contact between the rails, so as to avoid being cut by the passage of the wheels, the connections were not found sufficiently delicate to give as good results as required. A plan has been suggested by Mr. W. F. King, chief astronomer to the Department of the Interior, by which a wire between the rails is substituted for the rails to complete the circuit, and so eliminate the uneven motion of the car. His method also substitutes a break for a make circuit.

Mr. F. Napier Dennison, electrical expert at the Meteorological Bureau, Toronto, now in charge of the Victoria Meteorological Station, called here on his way west during the summer and looked over the plant. He kindly drew a plan giving practical application to Mr. King's scheme.

I hope to have the electrical appliances in use for rating the meters next spring.

### DITCH INSPECTION.

Five ditches were inspected during the summer with a view to the issue of a license for water rights, under section 24 of the North-west Irrigation Act. They may be enumerated as follows:—

The late James A. Macmillan's ditch, heading from Sheep River in the south-east quarter of section 7, township 20, range 2, west of the 5th meridian; to irrigate 799 acres.

Samuel Howe's ditch, heading from Macabee Creek, a tributary of Sheep River in the north-west quarter of section 30, township 19, range 3, west of the 5th meridian; to irrigate 252 acres.

Malcolm T. Millar's ditch, heading from a tributary of Sheep River, in the north-west quarter of section 2, township 21, range 3, west of the 5th meridian, to irrigate 165 acres.

John and Samuel Hamilton's ditch heading from springs on Pine Creek, in the north-west and south-east quarters of section 9, township 22, range 2, west of the 5th meridian; to irrigate 60 acres.

The Superintendent General of Indian Affairs, a ditch to divert water from the Battle River at a point near the Roman Catholic Mission, on Bobtail's Indian Reserve, to be used for power purposes in connection with a grist, saw and shingle mill erected on Samson's Indian reserve.

Reports upon the inspection of the above ditches have been duly submitted.

## OFFICE WORK.

During my absence in the field, the office has been in charge of Mr. C. D. Rickards, who has attended to the correspondence and other matters connected therewith, in addition to his duties of taking the records of the Bow and Elbow nilometers and gauge rods, and the two evaporation pans.

It was necessary that I should come in from the field at the beginning of each month, in order to clear up matters of correspondence requiring my personal attention and to make the payments due for gauge rod readings in the various parts of this district and Assiniboia; also to receive progress reports from parties Nos. 2 and 3, and direct their further movements. Two hundred and eighty-one letters have been received, and 401 sent out since my occupation on the 1st of June last.

The office work for the winter may be briefly summarized as follows:—

In addition to the general office routine, I shall with my assistant, be engaged upon a continuation of the topographical map of the foothills region. It will first be necessary to develop the views taken during the summer, and forward the negatives to Ottawa to have plotting enlargements made.

Mr. Macintyre, (in charge of party No. 2) with his assistant will be engaged upon the compilation of his season's topographical work, and the construction of a general map of the section covered, to illustrate the same by continuous contour lines at intervals of 25 feet difference in elevation.

An effort will be made to bring our general diagram maps, (sheets 1 and 2) up to date, and to make a commencement at sheet No. 3, covering the work of the two past seasons in the Cypress Hills country.

It will also be necessary to plot all the records from gauge rods for the past two years, and the nilometer and evaporation records for this year to be embodied in the next issue of the general report on irrigation and irrigation surveys. In addition there are several cross-sections to plot, and complete the flow from the measurements taken of the velocity of the streams.

Mr. Child, (in charge of party No. 3) will complete the returns of his summer's work at the offices of the Department of Public Works at Regina.

I have the honour to be, Sir,

Your obedient servant,

ARTHUR O. WHEELER,

*In charge of Irrigation Surveys.*

# Department of the Interior.

No 25.

PARTY No. 2.

R. W. MACINTYRE, C. E., IN CHARGE.

CALGARY, December 1st, 1898.

A. O. WHEELER, Esq., D.L.S.,  
In charge of Irrigation Surveys,  
Calgary.

SIR,—I have the honour to submit the following report of my season's work during 1898, with party No. 2 of the irrigation surveys.

My party was completed, and went into camp at Shaganappi Point by the Bow River, on June the 8th.

Instructions for the season's work were received from you on June the 10th. The instrument supplied me for the survey is known as Short's gradient telemeter level, made by Casella. On June the 11th, extensive trials were made by me in the vicinity of camp with a view to testing and adjusting this instrument. The tests were on the whole satisfactory. On June the 13th levels were run along the east boundary of township 24, range 1, west of the 5th meridian, to compare results with the levels already established on this line, and the comparison was satisfactory.

The topographer made a traverse of part of this township in order to acquire the method of his work.

On June 15th, camp was struck and the party proceeded by trail to a point on Bow River about two miles south east of Cochrane.

The district selected for the season's operations is bounded on the north by the north boundary of township 25, commencing at the north east corner of range 4, west of 5th meridian, and extending to the north east corner of range 27, west of 4th meridian, a distance of 34 miles; on the east, by the east boundary of range 27, west of 4th meridian, from the north east corner of township 25, range 27 to point of intersection with Bow River, then southerly along Bow and Highwood Rivers respectively, to the north east corner of township 18, range 29, west of the 4th meridian; on the south, by the north boundary of township 18, from the north-east corner of range 29, west of the 4th meridian, to the north-east corner of range 3, west of the 5th meridian; on the west, by the east boundary of range 3, west of the 5th meridian to the north-east corner of township 20; east boundary of range 4, to the north-east corner of township 23; east boundary of range 5 to the north east corner of township 24, and east boundary of range 6, to Bow River near Radnor, on the C.P.R.

Work was commenced at the north-east corner of township 25, range 4, west of 5th meridian. The elevation of this point was established by Mr. T. D. Green, D.L.S., in 1894.

At intervals of two miles the meridians were levelled south to Bow river. The sections lying between the levelled lines were traversed (diagonally as a rule) by the topographer; his instruments consisted of an aneroid barometer, a prismatic compass and an Abney hand level. The distances were paced either on foot, or on horseback, being checked at the section corners. Both these methods of measurement were put on a good working basis, by taking the average of a number of sections.

The outlined district north of Bow River embracing an area of 510 square miles was commenced on June the 16th, and completed by August the 29th.

The district south of Bow River was commenced on September the 1st, but work was stopped by your instructions on October the 7th, 266 square miles having been completed to that date.

The total area covered during the season (June the 16th to October the 7th) was 776 square miles. The line mileage measured and levelled over with the telemeter was about 440 miles.

A topography book, which included about half a mile on either side of the levelled line, was kept by the rodman to supplement the topographer's notes. The rodman used a hand level in connection with his notes. The telemeter measurements were checked every half mile at the quarter section and section corners, and agreed as a rule within a few feet of the theoretic distance.

The telemeter levels were checked wherever connections were made with established bench marks or lines already levelled. The majority of these checks were quite satisfactory, the difference varying from 0.0 to 3 feet.

The object of this survey is to supply the material necessary to compile a contour map, from which those interested in irrigation may obtain information as to the practicability of irrigating the various lands shown in each township.

Short's gradient telemeter level, maker, L. Casella, London, England.—This instrument is the first of its kind to be used on the Canadian irrigation surveys. A brief description is herewith appended. The advantages of the telemeter are twofold.

First: Chainmen are dispensed with, as distance is measured by taking the difference between two readings on the rod, or level staff.

Secondly: In the case of the ordinary level, the vertical rise or fall measurement is confined to the length of rod used; with the telemeter level any vertical distance up to about 150 feet can be measured at one reading, because the curved upper surface of the horizontal circle enables the telescope to be depressed or elevated at will when revolved horizontally. The book used for telemeter notes, however, gives much more work than an ordinary level book, on account of the additional calculations required in connection with using the pairs of readings on the horizontal circle, from which distance and differences of elevation are obtained.

In taking a series of short sights down a steep bank (which is too high to be disposed of in one reading) the telemeter has no advantage over the ordinary level, as a fairly long sight (or base) is necessary to obtain a large vertical angle (or measurement). Practically speaking, the vertical distance measured increases in direct proportion to the length of the horizontal sight taken.

Another point in connection with the telemeter is that the instrument must always be set up on the line (or course) to ensure accurate measurement of distance; whereas with a level the rod alone has to follow the line being run. The height of instrument is measured with a tape suspended from the base of the telescope axis. This tape is of the "wire wove" variety and stretches continually, necessitating the use of the rod for obtaining height of instrument. However, the principle of the tape is undoubtedly the most expeditious, and if made of steel or similar material would be invaluable.

The telemeter level is undoubtedly of much value for rapid preliminary work.

A traverse of part of Highwood River was made by me with one man as rodman. The bearings were taken from the telemeter compass (beneath the telescope) and distance and elevations were read on the rod at each station. Thus a traverse was made with one instrument and one man, in place of two instruments (level and compass) and four men (picketman, rodman and two chainmen), which would have been necessary had an ordinary level been used. It was also possible to take bearings on courses which intersected the water, and would have consequently been inaccessible to chainmen.

I have the honour to be, Sir,

Your obedient servant,

R. W. MACINTYRE, C.E.

# Department of the Interior.

No. 26.

PARTY No. 3.

JAMES T. CHILD, C. E., IN CHARGE.

REGINA, 1st December, 1898.

A. O. WHEELER, Esq., D. L. S.,  
In charge of Irrigation Surveys,  
Calgary, N. W. T.

SIR,—I have the honour to submit the following report of the field operations of party No 3, of the irrigation surveys during the season 1898.

In June 1898, this party following out your instructions, viz., to examine the different sources of water supply in eastern Assiniboia, and make surveys of suitable locations for the construction of dams and reservoirs to impound water with a view to increasing the supply for domestic and stock watering purposes, commenced work at Fort Qu'Appelle, Assa.

The water in the chain of lakes delineated on the district maps as "Fishing lakes," has for some time past been generally decreasing, and in receding from the shores, left a beach of decaying organic matter, injurious to the health of the inhabitants along the shores of these lakes. Two dams constructed in the Qu'Appelle river about six years ago, one at the outlet of the lake at Fort Qu'Appelle, and the other about 12 miles lower down at Katepwe, with a view to maintaining at a normal level the water in these lakes, were damaged during the spring freshets of this year, and the lower one washed out. In running a line of levels it was found that the difference in level between the upper and lower of these lakes was only about two feet. It was decided, therefore, to locate one dam at Katepwe to fulfil the objects of these two. The Government of the North-west, following out this idea, has the construction of this dam now under way. Indian Head and vicinity are badly in need of some system for augmenting the domestic and stock watering supply. The settlers at present are largely dependent for water upon melted snow in spring time, and the rainfall during the summer months which, when possible, they impound in hollows and reservoirs. It is found that some springs issuing from the Squirrel Hills about  $7\frac{1}{2}$  miles south of Indian Head, would to a considerable extent remedy these conditions. With this in view suitable sites were chosen for the construction of reservoirs to hold this water and the run-off from the hills at different places in its course down a natural hollow to Indian Head. The flow of water from the springs measured by a gauge board amounts to 30,730 gallons per 24 hours; it appears to be of excellent quality, and the elevation of 200 feet above the town of Indian Head would at once suggest a feasible and economical system of water supply by means of a pipe line from the springs.

Red-fox Creek, situated between Indian Head and Sinaluta was reconnoitred; this creek has a considerable flow in the spring time but soon runs dry. Two reservoirs were located here, one embracing an area of something over 100 acres, with fifteen feet of water at the dam.

A fair site for reservoir purposes was located 2 miles west of Grenfell on the main road between that town and Wolseley; this would be a useful watering place for stock being driven along the highway to market.

Pipestone creek to the south of Grenfell was next visited. A ditch was laid out through the height of land dividing Pipestone and Summerberry Creeks, and a dam located at the foot of Pipestone lakes at the road crossing to Mr. Skelliter's place. This dam would raise the water in the lakes 2 feet, forming them into a reservoir, the draw-off



from which would be along the ditch above mentioned into Summerberry Creek, supplying the Grenfell district, the rail opposite the station on the C. P. R. in Grenfell being 113.90 feet below the present surface level of the Pipestone Lakes.

The height of land between Pipestone Creek and Weed Lake (Ecapo on maps) was then prospected with the result that the latter was found to be at a lower elevation than the former, so that at any time it would be an easy matter to replenish the water in the lake from Pipestone Creek. A very good reservoir site is located in sections 30 and 31, township 16, range 6, west of the 2nd meridian, suitable for the supply of the Oakshela district, and another in section 4, township 18, range 8, in a ravine tributary to the Qu'Appelle River; the latter would be of very great service to the settlers thickly scattered around, and who for the most part are under the disadvantage of having to haul water from the Qu'Appelle Valley, in some instances a distance of 8 or 9 miles.

It will be noticed on the maps that some large lakes are shown in the vicinity of Yorkton; these, however, are now all dry. A survey as to the most feasible method of replenishing these lakes was made, when it was found that Insinger's Creek, tributary of the Cussed Creek, could be diverted along a ditch  $1\frac{1}{2}$  miles, and discharged into these old lake beds, and if not sufficient to entirely replenish them would very materially assist in supplying the settlers with water, which is badly needed in the district.

The Government of the North-west has since taken this matter in hand, the ditch being now under construction.

I have the honour to be, Sir,

Your obedient servant,

JAS. T. CHILD, C.E.

# Department of the Interior.

No. 27.

REPORT OF R. W. CAUTLEY, D.L.S.

SURVEYS IN YUKON TERRITORY.

DAWSON, YUKON TERRITORY, 16th November, 1898.

THOS. FAWCETT, Esq., D.T.S.,  
Dawson, Yukon Territory.

SIR,—I have the honour to submit the following report of work upon which I have been engaged during the last twelve months.

On the 10th of August, 1897, I received instructions from Mr. Jas. A. Smart, Deputy Minister of the Interior, to proceed to the Yukon with Inspector Harper's party of N.W.M.P. to work under yourself. Besides myself were Mr. J. A. Cadenhead, D.L.S., Joseph A. Clarke, and two survey men, also attached to this party. We reached Skagway on the 20th August, and left Lake Bennett on the 23rd September.

After a cold and rather stormy trip through the lakes and down the river, we arrived at Dawson on the 10th October, 1897, where we found that there was a rather serious food scare, on account of which you were obliged to send our party down to Fort Yukon, in charge of Mr. Cadenhead, for the winter.

Mr. Cadenhead returned alone in the early winter, and acting under your instructions I started out from Fort Yukon on the 15th February with the rest of the party, and sufficient provisions to last us until the middle of June. Having so much provisions to move and only five dogs amongst us, we were obliged to make double trips up to Seventy Mile River, from where we were able to move everything at a single trip, and arrived at Dawson on the 3rd April, 1898.

From the 5th until the 17th of April, I was engaged in drafting and tracing plans of the town site of Dawson.

On the 19th April, acting under your instructions, Messrs. Gibbon, Cadenhead and myself, with a party of men proceeded to Dominion Creek, where Mr. Gibbon and myself made a survey of all the creek claims between nine above upper discovery, and one hundred and twenty below lower discovery. Mr. Cadenhead took evidence on the ground with regard to the legality of some of the staking.

Dominion Creek is one of the largest tributaries of Indian River, of which tributaries Sulphur and Quartz Creeks are also gold-bearing streams under active mining operations. Some idea of its length may be gained from the fact that there are twenty-six claims recorded above upper discovery, forty-nine between the two discoveries, and two hundred and seventy-six below lower discovery, although these should really be considered as below upper discovery, all of which would give an approximate length of thirty miles.

It is the only creek in the territory which has two recognized discoveries, the natural consequence of which is, that there is a lack of sequence in the numbering of the claims, which creates a good deal of confusion in the minds of those who are not very well acquainted with the creek. For instance, claims are numbered consecutively from discovery to twenty-six above upper discovery, and downstream from discovery to thirty-six below upper discovery, and again from discovery to thirteen above lower discovery. Number thirteen above lower and number thirty-six below upper adjoin one another. Below lower discovery the confusion is even worse, because the miners numbered their claims consecutively down stream from discovery to thirty-eight below lower discovery, but the next man who came along, being of an original turn of mind, numbered his claim sixty-eight below upper discovery, and all the subsequent locators followed suit until they reached one hundred and one below, when for some reason there is another jump in numbers to one hundred and twenty below. There are three distinct changes in the character of the creek bed, in the part of the creek surveyed.

First.—From two above upper discovery to the head of the creek, the creek bed is narrow and well defined, and the mountains enclose it on each side.

Second.—From two above upper discovery to two below lower, the creek runs through a succession of low flats which vary in width from sixty to one hundred and sixty feet, which in turn are bounded by gravel benches having banks from eight to fifteen feet high, and which rise gradually to the foot of the mountains on each side.

Third.—From two below lower discovery as far as we went the creek runs through a well defined channel from twenty to forty feet wide, with banks from eight to twelve feet high, while the benches on each side of the creek rise very gradually back to the foot of the hillsides, and make it impossible to judge accurately where the limits of the creek claims should be. The valley increases in width from lower discovery down stream, and is in some cases as much as fifteen hundred feet wide, and the creek, speaking generally, keeps pretty well to the southerly side of it.

The ice in the creek went out on the second of May, after we had got down as far as lower discovery, and, a month later, when we returned to this part of the creek it was scarcely recognizable.

During the winter the water is continually running over the ice and freezing, with the result that the whole of the low flats aforementioned become filled with ice from bank to bank, glaciers forming as thick as eight and nine feet in many cases, and on the first of June a good deal of this heavy ice was still lying in the creek bed. The current does not probably exceed a rate of three miles an hour, but the creek affords splendid opportunities for the miner to divert the water at almost any given point, being one of the most crooked creeks imaginable.

There is very little good timber to be got near the creek itself, but there is a good deal of rather poor spruce on the neighbouring hillsides, while on the benches there is nothing but a little very scrubby spruce, most of which has been burnt. These benches are covered with muskeg and “nigger-heads,” which effectually prevent the frost from ever coming more than a foot or two out of the ground, and are composed of a layer, varying in depth from ten to twenty-five feet, of a peat-like covering, locally known as “muck,” over gravel, and the bed-rock, as on several of the other creeks in this district, is, as a rule, much broken on the surface and decayed.

During the summer the hillside claims on each side of the creek were taken up, and some of them seem to be turning out very well, if one may judge from report, and better still, from the number of mining disputes over some of these claims, which are being pushed to the bitter end.

We returned to Dawson on the 31st May. From the 1st June until the 9th of July, I was occupied with office work in connection with the Dominion Creek survey. From the 11th until the 30th of July I was engaged in receiving applications for and recording bench claims on Dominion Creek. On the 1st of August you sent me out to examine the posts on the ground in connection with some Dominion Creek bench claim disputes, and I returned on the 11th of that month. From this on I took over the quartz recording, of which I am still in charge. On my return I continued to record Dominion Creek bench claims and quartz until the 31st August, 1898, after which you decided to let the bench recording on Dominion Creek revert into the ordinary bench claim department, and to allow me to receive applications for claims, the original title to which had lapsed through non-representation, and which were thrown open for re-location on the 1st September, 1898.

On the 14th September, I went to Fort Selkirk to survey a town site there, returning on the 8th October, since when I have been receiving applications for re-located claims, and recording quartz claims and getting up returns of the Selkirk survey after hours.

I have the honour to be, Sir,

Your obedient servant,

R. W. CAUTLEY, D.L.S.

# Department of the Interior.

No. 28.

## REPORT ON THE TOWNSITE OF SELKIRK.

DAWSON, YUKON TERRITORY, 8th November, 1898.

THOMAS FAWCETT, ESQ., D.T.S.,  
Dawson, Yukon Territory.

SIR,—I have the honour to submit the following report on the townsite of Selkirk, surveyed by me in September, 1898, under instructions from Mr. William Ogilvie, Commissioner of the Yukon Territory.

On the 14th September, 1898, I started for Selkirk with a party of three men on the S. S. Ora, reached my destination at midnight of the 17th September, and commenced operations as soon as possible.

The townsite of Selkirk is situated on the left bank of the Yukon River, about one mile below the junction of Lewes and Pelly Rivers, and is in a very good location, being on a high gravel bench, which rises gradually to the foot of a low range of hills about  $\frac{3}{4}$  mile back from the river bank.

At this time there was not one building on that part of the townsite shown to be sub-divided on the accompanying plan, except the Church Missionary Society's mission house and church and an unfinished building put up by some Roman Catholic priests.

Rev. Archdeacon Canham, of the C.M.S., wished to be granted lots 1, 2, 3, 11, 12 and 13, in block D. for C.M.S. purposes, and from the position of his buildings, which were built about four years ago, as shown on the plan, his desire would seem reasonable.

The Roman Catholics at Selkirk spoke to me of a large concession in block E., granted to them by Major Walsh on his way out, but they have only the unfinished building already referred to, on the ground, and there is no incumbent stationed there, besides which the front street is a most unsuitable location for a church in a mining town. Lots 3, 9 and 10 in block K. are occupied by Indian graves, and I laid off lots 1 and 2 in block AA, as an Indian burial ground for future interment.

There is a bank from 7 to 12 feet high, running along the centre of Second Avenue from 4th street as far westerly as the survey extends, and blocks F.G., and part of E. are lower than the rest of the townsite and are probably covered with water for a week or two in the spring of some years.

There is very little timber on the surveyed part of the townsite, except in the south westerly part of it where there is a little spruce of fairly good quality.

The Indians at Selkirk are not numerous, there being perhaps forty of those who make their headquarters there.

In pursuance of some further instructions from Commissioner Ogilvie, dated 31st September, 1898, I held an interim auction sale of townsite lots on the 4th October, 1898, at which all the available lots in blocks D., K., R. and V. and lots 5, 6 and 7 in block E. were sold as per lists of sales accompanying this report.

I have the honour to be, Sir,

Your obedient servant,

R. W. CAUTLEY, D.L.S.



Department of the Interior.

PART VII.

BRITISH COLUMBIA CLAIMS



## Department of the Interior.

### BRITISH COLUMBIA CLAIMS.

#### REPORT OF T. G. ROTHWELL, COMMISSIONER, ON CLAIMS OF SETTLERS IN ESQUIMALT AND NANAIMO RAILWAY BELT, B. C.

DEPARTMENT OF THE INTERIOR,  
OTTAWA, 21st December, 1897.

SIR,—In accordance with a direction given in and by the commission which issued to me upon the 10th day of August last, of which a copy is hereunto attached, I have the honour to report to you the result of my investigation into the claims referred to in that commission, the evidence taken before me concerning such claims, and the opinion which I have arrived at thereon, and which under the terms of my commission I am to express thereon.

The claims in question consist of the claims of certain settlers upon the tract of lands which was conveyed to the Government of the Dominion of Canada, by the Province of British Columbia, under the provisions of chapter 14 of 47 Victoria, of the Statutes of that Province, entitled: "An Act relating to the Island Railway, the Graving Dock and Railway Lands of the Province," and which, in accordance with the purpose and intention of certain provisions of that Act, in that behalf contained, and under the authority of section 3 of chapter 6 of 47 Victoria, of the Acts of the Dominion of Canada, entitled: "An Act respecting the Vancouver Island Railway, the Esquimalt Graving Dock and certain railway lands of the Province of British Columbia, granted to the Dominion," was granted to the Esquimalt and Nanaimo Railway Company (hereinafter referred to as the railway company) by letters-patent bearing date the 21st April, 1887, of which a copy is attached hereto.

The settlers mentioned are those who are referred to as *bona-fide* squatters, in section 23 of the Provincial Act before referred to, and which is hereinafter referred to as chapter 14, and in sub-section 2 of section 7, of the Dominion Act before referred to, and which is hereafter referred to as chapter 6. It was provided by this section and sub-section, that each *bona-fide* squatter, who had continuously occupied and improved any of the lands within the tract of lands so granted to the railway company, for a period of one year, prior to the 1st January, 1883, should be entitled to a grant of the freehold of the surface rights of the land settled or squatted upon by him to the extent of 160 acres, at the rate of \$1 per acre.

The settlers affected by these provisions have always claimed, and now claim, however, that they are entitled to a grant in fee simple not only of the surface rights, but also of the under-rights including the coal and all other minerals, except gold and silver, or, in other words, to the same title, to their respective lands, which a settler, who had applied for and obtained a pre-emption record under the provisions of the Act passed in the year 1875 by the Province, being chapter 5 of 38 Victoria, or under the provisions of any of the Acts which were repealed by the first section of that Act, and who had complied with the conditions of his pre-emption entry, secured from the Province by the issue of a Crown grant in the form of which a copy is hereto attached.

As none of the settlers, to protect whose rights section 23, of chapter 14 and sub-section 2, of section 7, of chapter 6 have always been understood to have been passed, obtained entries for the lands they respectively settled upon and claimed, until they obtained entries by the acceptance of pre-emption records subject to the provisions of section 23, it is clear that they have no claim to the under-rights which they could establish by any legal proceedings. In other words, the settler who accepted a pre-emption record, subject to the provisions of section 23, for the land which he claimed, thereby agreed, although unintentionally and in ignorance of the meaning of those



provisions, to pay \$1 per acre for the surface rights of the land he claimed and to accept a grant thereof in full settlement of his claim.

This is the legal position in which each of these settlers or persons claiming title from such settlers, respectively, now stands with regard to his land. This is the standpoint from which the claims have been invariably considered by all persons who have had to deal with them officially in the past. These settlers had "no status" with regard to the lands they claimed, and it may be that it is the only standpoint from which I should consider them. But, as Mr. Patrick Dolan, one of the claimants, stated in his evidence, "the law does not always do right by settlers," and as I think I can show not only from the evidence, but from the Acts which have been passed, and the notices that have been issued by the Province with regard to this matter, that these settlers did not receive the protection, when such Acts and notices were framed, which they were justly entitled to, I propose to go into it and set out in detail all material particulars concerning it, from the time of the issue of the notice of the 1st July, 1873, referred to in the evidence of Mr. W. S. Gore, Deputy Commissioner of Lands and Works for the Province, up to and inclusive of the passing of the Provincial chapter 14, and Dominion chapter 6 of 47 Victoria, before referred to. When I have completed this task I feel satisfied that I will have established the conclusion I have arrived at, that although these settlers, speaking generally, have now no legal right to the coal and other minerals under their lands, they or those claiming from them have a just claim for redress at the hands of the Province in which they live and a claim which that Province cannot honourably refuse to recognize and settle. Up to the present date the Province appears to have been perfectly satisfied that all blame for this matter should be laid upon the Dominion, notwithstanding that the sole interest of the Dominion was that of the trustee for the Province; but even if the Dominion was responsible for the injustice which I consider has been done to these settlers, it is the duty of the Province to redress that injustice.

The notice of the 1st July, 1873, I have referred to, is the notice which was published in the British Columbia Gazette of the 5th of that month and the first one which, according to the evidence of Mr. Gore, was issued by any Government of the Province to reserve from settlement a tract of land to be conveyed to the Dominion Government, in trust, to aid in the building of any railway upon Vancouver Island. It was passed upon the authority of the Order-in-Council therein mentioned, for the purpose above stated.

It is doubtful, I think, that this notice and the reserve therein referred to were in force when many of the settlers applied for entry for the lands they had squatted upon, but as none of them was granted a pre-emption record it is unnecessary to consider this question. Apparently, however, such notice and reserve were assumed to be in force by the officials of the Province who had to deal with the lands in question, because this notice was the only notice of reservation that was issued by the Provincial Government until the notice which was published in the British Columbia Gazette of the 22nd April, 1882, reserving the tract of land therein described for the purpose of enabling the Government of that Province to carry out the provisions of the "Vancouver Land and Railway Company Act, 1882," chapter 15 of 45 Victoria, commonly known and referred to in the evidence as the "Clement's Act," from the name of one of the promoters of that company, Mr. Lewis M. Clement. It was because of this notice of the 1st July, 1873, that the applications of all the settlers who applied prior to the passing of the Clement's Act were refused.

That the Provincial Government of 1883 also considered this notice of 1873 to be in force is evidenced by the fact that in the notice of the 12th June, 1883, which was published in the British Columbia Gazette of the following day, reserving "in furtherance of the construction of the Island Railway," the tract of land therein reserved, it was provided that this notice of the 1st July, 1873, was thereby rescinded. A copy of each of these three notices, which according to the evidence of Mr. Gore, are the only notices of the kind which were issued by the Province, is attached hereto, and I wish particularly to point out that no mention is made in either of them, in any of the Land Acts passed by the Province or in any Act passed by the Province incorporating or otherwise concerning any Railway Company, until the Clement's Act was passed, of

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the reservation of the minerals or under-rights. As the section of the Clement's Act by which the minerals were to be granted to the company incorporated by that Act, and not to the settler, will be quoted further on, it is unnecessary to quote it here, but by such section the settler was given, for the first time, intimation of any kind that even though he might obtain title to lands upon which he had squatted, he would not be granted the under-rights which before that time passed to each grantee by his Crown grant. Indeed in each of the Land Acts which were in force from 1870 the form of Crown grant to be issued thereunder is provided to be the form in the schedule thereto, in which form the only minerals mentioned as being reserved are gold and silver.

It may be well to state here the several Land Acts that were in force in the Province from 1870 to 1884. Until the 22nd April, 1875, when the "Land Act, 1875," was assented to, the law of the Province under which settlers had to obtain title to their lands was the "Land Ordinance, of 1870," as amended in 1872 and 1873, as the Act of 1874 was not brought into force. Its provisions, however, are the same as the provisions of the "Land Act, 1875." In 1876, an Act, chapter 25, of 39 Victoria, was passed to amend one section of the "Land Act, 1875," but this amending Act was repealed in the following year by chapter 26, 40 Victoria. The "Land Act, 1875," was, however, amended in 1878, by chapter 25, of 42 Victoria, in 1879, by chapter 21 of 42 Victoria, in 1882, by chapter 6, of 45 Victoria, and in 1883, by chapter 17, of 46 Victoria. In 1884, by chapter 16, 47 Victoria, the laws affecting Crown Lands in British Columbia were again amended and consolidated, and the "land Act, 1875," and its amending acts were repealed.

In none of these Acts until chapter 6, 45 Victoria was passed, were any minerals reserved but gold and silver, but by section 6 of that Act coal was also reserved. It was not until the passing of the Clement's Act, chapter 15, 45 Victoria, however, as I have before pointed out, that any provision was passed to reserve minerals from the settler and to grant them to a railway company.

In 1875, by section 1, of chapter 13, 38 Victoria, a grant of lands not to exceed 20 miles on each side of the railway line was made to the Dominion Government to aid in constructing a railway between Nanaimo and Esquimalt Harbour, provision for building a railway between that harbour and Victoria having been made in 1873, by chapter 23, 36 Victoria, no land grant being, however, provided for this enterprise. By one of the sections of this latter Act provision was made that none of its provisions were to take effect until the Pacific terminus of the Canadian Pacific Railway had been officially announced, and not until the 31st December, 1874, unless that company had previously selected and acquired all the lands in the district through which the Victoria and Esquimalt Railway was to run. The charter of the then proposed Canadian Pacific Railway Company having been revoked, the time in which the construction of the Victoria and Esquimalt Railway was to be commenced and completed was fixed by section 2, of chapter 29, 39 Victoria (1876), by section 3 of which Act it was, however, provided that nothing in that Act should affect or interfere with the Esquimalt and Nanaimo Railway Company. In 1882, however, when the Clement's Act was passed, chapter 16, 45 Victoria was passed to repeal chapter 13, 38 Victoria.

I have deemed it advisable to refer to all these Acts in this report to facilitate reference in case it may be thought necessary to examine them, because of my statement that it was not until the passing of the Clement's Act that provision was made for the granting of surface rights only to the settler of lands he had squatted upon, or because of any other reason.

The tract of lands which was reserved to aid in the construction of the railway to be built by the company incorporated by the Clement's Act, is the tract of land reserved by the notice of the 21st April, 1882, and all of which, except the portion described in section 4 thereof, was granted to the Dominion Government by chapter 14.

I may here quote section 19 of the Clement's Act:—

"19. All farming squatters who have made permanent improvements, and who "have permanently resided for not less than two years previous to the passing of this Act "upon any of the lands to be granted in pursuance of this act, shall be entitled to purchase from the company the lands upon which they have so resided, at the price of one

‘dollar per acre ; but all coal and other mines and minerals, in and under such lands, shall be reserved and granted to the company.’”

Until these provisions became known to the settlers or squatters whose claims are the subject of this report, it is established, I consider, by the evidence that although most of them knew of the reservation of the tract of land, all of them expected and believed that they would ultimately receive Crown grants for the lands they respectively claimed, which would make them owners in fee thereof, without any reservation in the Crown grant as regards minerals, excepting only gold and silver.

When the provisions of the section (19) I have quoted from the Clement’s Act became known, the settlers united in an effort to secure what they evidently believed they were justly entitled to, and having brought their troubles and fears to the attention of the then Governor General of Canada, the Marquis de Lorne, when he visited Nanaimo, during the tour he was then making through the Province, by his advice, prepared and forwarded to Ottawa the petition which is repeatedly referred to in the evidence, and of which a copy is thereto attached. It is as follows :—

“To His Excellency the Governor General of the Dominion of Canada in Council assembled :

“The undersigned settlers and squatters on sections of lands within the railway reserve belt on Vancouver Island, humbly beg that Your Excellency in Council will take into your early consideration the previous prayers of your petitioners, wherein they have requested that an official intimation would be given them that the settlers or squatters would be secured in their promised rights and that they would be able to obtain the land on the same terms and conditions as similar lands outside the railway reserve have in previous years been conveyed to preceptors.

“And your petitioners, as in duty bound, will ever pray, etc., etc., etc.”

As it appears by the records of the Department of the Interior this petition having been referred to the Privy Council was referred to the then Minister of the Interior for report. The only material action which seems to have been taken with regard to it was to refer it, on the 2nd February, 1884, for report to the Honourable Joseph Trutch, then resident agent for Canada in British Columbia. Mr. (now Sir Joseph) Trutch simply acknowledged the receipt of the reference and stated that the claim set forth in the petition had been fully dealt with by the Act, chapter 14, before referred to. The manner in which the claims had been “fully dealt with” will be made clear to any one who will first read the petition of the settlers above quoted, and then read section 23 of chapter 14, which limited the settlers to a grant of the surface rights only, on the lands they claimed. It is very difficult to pass, without severe criticism the studied cold-blooded indifference, to the claims set forth in the petition, which was displayed by the then resident agent of the Dominion in the “report,” I have referred to. That it was his duty to have secured to these settlers, what I consider they had a right to expect, I do not think. That duty was then, as I consider it is to-day, upon the Government of the Province, in which these settlers lived, and in which were the lands upon which these settlers had been permitted to make their homes. But it was the duty of the resident agent, when a reference of the petition was made to him, to have reported either for or against the claims and to have stated clearly the grounds upon which his opinion was based. However, his report in this matter exactly corresponds with the action which appears to have been taken by all persons who had to deal with it, and I cannot pass unnoticed here a point that struck me when reading the 15th clause of the “Agreement with British Columbia” which is contained in the schedule to chapter 6. That clause relates to the then proposed amendment by the Legislature of the Province of chapter 14, of 46 Victoria, and in it particular reference is made to the proposed amendment of sections 23, 24, 25 and 26 of that Act.

By comparing the corresponding sections 23, 24, 25 and 26, of chapter 14, 47 Victoria, by which chapter 14, 46 Victoria was repealed, with sections 23, 24, 25 and 26 of that Act, it will be seen that no alteration whatever is made in two of the sections, and that the only material amendment is to make provision for the payment by the settler of \$1 per acre for his land. This very necessary provision, in the interests of the Railway Company, had been overlooked when section 23 of chapter 14, 46 Victoria, was framed.

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Another matter which goes to establish my opinion that the claims of these settlers were neither carefully nor fairly considered is shewn by the time that was given to them to decide whether they would accept the settlement of their claims secured to them by section 23, of chapter 14, and sub-section 2, of section 7, of chapter 6, or not. This time was fixed by the notice of the 7th of May, 1884, of which a copy is hereunto attached, and which was published in the *British Columbia Gazette* of the 8th and 15th of that month, and in one or two local newspapers. Settlers who had been agitating for upwards of two years for a title to both the surface rights and the under-rights of the lands claimed, were thereby given, at the most, twenty-three days, and in all probability, in view of poor postal and travelling facilities of that day, not one-quarter of that time in which to decide whether they would accept what had been provided for them or run the risk of the lands being given to others, as they were warned by the notice that the lands in question would be thrown open to other settlers after the 1st June next (1884). First the claims of these poor settlers "were fully dealt with" by taking from them what they had all along been claiming they were entitled to, and then they were given short and peremptory notice to come in and accept what had been left for them, and save it from being given to others. Truly, Mr. Patrick Dolan had much ground for believing that: "the law does not always do right by settlers."

It may be argued, however, that as the reservation for railway purposes of the tract of land referred to in the notice of July, 1873, was known to the most, if not all, of these people when they went into possession of the lands in question, and before they commenced to improve them, and that as none of them was granted a pre-emption record for the lands so taken up, until pre-emption records were granted subject to the provisions of section 23 of chapter 14, and of sub-section 2 of section 7, of chapter 6, they were reasonably dealt with under those provisions, and were solely responsible themselves for the results of their own illegal conduct in settling upon land which they knew was not open to settlement.

In reply to such a contention I desire to point out that the evidence of the settlers and others who appeared before me does not support it. Although they were told that their applications for pre-emption record could not be granted they were not warned to keep off the land, nor were they told that if they were in time granted records it would be for the surface rights only. Indeed, I think the weight of evidence supports the view that they were induced to remain upon the lands they had squatted upon and to believe that they would ultimately be granted the ordinary pre-emption record for such lands. Those of the original squatters who appeared before me were intelligent men, and the improvements which they made upon their lands are sufficient to establish their industry. They were a good class of settlers, men whom the officials they made application to would naturally consider should be induced to remain in the Province.

Mr. Thomas Cassidy, who first took possession of his land in 1878, made an application in writing with another settler, Mr. Charles Stewart. Mr. Fawcett, the Agent to whom the applications were made, refused to grant entries, but kept the applications. Mr. Cassidy was one of the four who made application for 1,000 acres of mineral land. This application was refused, the Agent stating that if he ever got land he would only get 160 acres. The meaning is clearly 160 acres by the usual Crown grant, not simply the surface rights thereto, the grant of surface rights with the under-rights reserved being then unknown in the Province. The Agent did not warn Mr. Cassidy off the land, but on the contrary allowed him to go to his home with the belief that he would ultimately obtain the usual title for the land he had applied for to the extent of 160 acres.

Mr. George Vipond first took possession of his land in 1875. He made a written application for entry to Mr. Fawcett who told him the land was not open to entry, but when it was open he would get it subject to the provisions of the Land Act in force when he made application. Later on in the evidence Mr. Vipond stated that Mr. Fawcett told him that the settlers' rights would be respected.

Mr. Archibald Hamilton first located his land in 1878. He made a verbal application to Mr. E. G. Prior, who is now one of the representatives in the House of Commons, for Victoria, and who in 1878 was Assistant Commissioner of Lands and Works, at Nanaimo, that being the correct title of Mr. Fawcett, of Mr. Prior who succeeded him,

and of Mr. Bray, the present Agent, who succeeded Mr. Prior. According to Mr. Hamilton's evidence Mr. Prior told him, when he verbally applied to him for entry, that he could not give him entry but would note that he had applied.

Mr. James Patterson, who was sent by his brother settlers in 1891, to Ottawa to urge these claims upon the Government of that day, and who then had an interview with the present Premier of the Dominion, the Right Honourable Sir Wilfred Laurier, first located his land in 1879. He applied to Mr. Fawcett, and, as he had heard of the Railway Reserve asked him whether, if he was taking up land as a home for himself and family, he would take a piece of the tract reserved. Mr. Patterson swore that Mr. Fawcett said he would and I believe Mr. Patterson. Depending on Mr. Fawcett's answer, Mr. Patterson went on the land he had selected and made it his home. His improvements are valuable and he is living on the land to-day. When Mr. Prior was agent Mr. Patterson had his land surveyed. He brought the plan of survey to Mr. Prior, who took it and said "nothing." Mr. Patterson's application was in writing. It was produced by Mr. Bray and a copy of it is attached to the evidence, and I have not the slightest doubt that when Mr. Patterson left it with Mr. Fawcett he firmly believed that he would in time receive the usual Crown grant for his land.

Mrs. Agnes Frew, to whose deceased husband a Crown grant had issued, in his lifetime, for 196.75 acres of "Belle Isle Island," and by which the only minerals reserved were gold and silver, applied in 1880, for the remainder of the Island, 83.25 acres. Mr. Bray gave her to understand she could have it, but subsequently she applied to Mr. Gore, who told her it belonged to the Railway Company.

Mr. Samuel Jones having in 1880 agreed to buy the stock and improvements Mr. Crane had made upon a certain piece of land, made enquiry of the then agent as to Mr. Crane's right to the land before he—Mr. Jones—closed the purchase.

Mr. William Hodson, who first located his land in 1877, made a verbal application to Mr. Fawcett, who did not warn him off the land, but on the contrary simply told him it was not in his power to give him any right to the land at that time. Mr. Hodson surely expected from Mr. Fawcett's reply that he would in time receive entry for his land, as he went ahead and made very valuable improvements upon it.

Mr. George Taylor did not locate his land until 1883, but his claim to it was based upon the prior claim or right thereto of a Mr. McKay, whose improvements upon the land he purchased. Mr. Bray recognized his right to the land before he obtained a pre-emption record in 1884. A Mr. Frank Holden wanted 60 acres of it but his application was refused by Mr. Bray, who decided that Mr. Taylor was entitled to the land.

Mr. William Jack first located his land in 1876, and in that year he had a partner, Mr. Emmanuel Wiles, who made application to Mr. Fawcett, in writing, for two adjoining parcels of land. Mr. Fawcett took Mr. Jack's application, wrote his name on an envelope, and put both in a drawer in the office, saying that he could do nothing further for him then, but would let him know later on and that he would have the first right to the land.

Mr. McGregor applied in 1879 for his land, to Mr. Prior, who took his application, and said that the land was not open for entry just then but that he would keep the application until the land was thrown open.

Mr. Emmanuel Wiles gave evidence on the point I am now dealing with, which corresponds with the evidence of Mr. Jack before noted. Mr. Fawcett took his application and put it away and told him he would have to pay for the land when notified, that he could go on the land and would get it when it came into market.

Mr. William Morgan, in 1882, bought out the interests of Mr. Bruno Mellado, who he believed had taken up the land in 1876. At all events when he bought it he went to Mr. Bray's office, and Mr. Bray first looked at the conveyance to him, Mr. Morgan, of Mr. Mellado's improvements and "transferred Mellado's right to him," Morgan.

Mr. Charles Bennie located his land in 1881. He then applied for entry to Mr. Bray, who told him that all he could do was to put a mark on the section on the plan. Part of the lands so applied for was an Island, but as there was another applicant for it, Mr. Bray refused to note his claim as to the Island, but set aside other land in lieu of it for him.

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Mr. James Malpass, to whose evidence I draw particular attention, as I was very much impressed with both the man and his statement, and know that he is held in the highest esteem by his neighbours and by all who know him, who spoke of him to me, stated that he first took up his land in 1879, when he made a written application to Mr. Prior for it; that Mr. Prior told him he could not record his entry, but that he could leave his application and when the lands were thrown open to entry he would get the first chance; that neither Mr. Prior nor any one else objected to his going on the land, but that they encouraged the settlers to remain on their lands. I wish to draw special attention to the following statement which Mr. Malpass made:—"The officials at Victoria, the Premier at that time and our member advised us to stay on the land, they thought it would be safe to stay on the lands and when there was a settlement we would get our rights."

Mr. Patrick Dolan first located his land in 1879, when he made application to Mr. Prior for it. His application was one of those which Mr. Bray was able to produce. A copy of it is embodied in the transcript of Mr. Dolan's evidence. The original bore Mr. Prior's initials. Mr. Dolan's statement with regard to Mr. Prior's acceptance of it, after he had made his initial upon it, was: "I will put it away for you, Mr. Dolan, and you will have first right to the land when it is thrown open." He also swore that Mr. Prior advised him to go into possession of the land, "as if he didn't somebody else might get it;" that he advised him, Mr. Dolan, to build a house on it; that he did so and that he and his family had been living there ever since and were living there when he gave his evidence. The extent and nature of the improvements which Mr. Dolan made upon his land show him to be a settler of whom any country should be proud. After Mr. Bray had succeeded Mr. Prior, Mr. Dolan purchased the improvements of a Mr. Samuel Saunders on an adjoining 160 acres of land, and his rights thereto; he told Mr. Bray of the transfer to him, and as Mr. Bray told him he could not hold the Saunders claim and the lands he had originally located, as he would not have more than 160 acres, he selected the 160 acres for which he subsequently obtained from the Railway Company a grant of the surface rights only.

Mr. John Hill first located his land in 1879. He made verbal application for it to Mr. Prior, who said "Jack, I cannot give you any record of your lands now, the lands are locked up," but that "he would have first chance."

Mr. Thomas Rickard, who took up his land in 1877, swore that he applied verbally to Mr. Fawcett, who gave him "good encouragement" to go on the land. He did so, substantially improved the land and proved himself to be a good settler.

Mr. Joseph Hoskin, whose land was first located by his son in 1878, went to Mr. Bray about two years, or so, afterwards, and Mr. Bray struck out the son's name, and put on the father's name for the land in question.

Mr. Parker White, a poor man, who after struggling for years to acquire a home for himself and who yet resides upon the land he selected for that purpose, although he is no longer its owner, having been unable to pay off certain loans made to him to secure the payment of which he had executed mortgages against it, appeared before me on behalf of the present owner. Mr. White's evidence was in effect, that he first located the land in 1877, had applied to Mr. Prior for a pre-emption record, in writing, and that Mr. Prior had put it in a box and given him to understand that when other settlers got their lands he would get his.

I have noted only those cases in which the claimants appeared before me, and gave evidence, upon the point now being considered, namely, what effort they made to obtain entry, and what the reply or action of the Agent was to whom the application was made. Mr. Bray, in his examination, stated that his answer to all who applied to him for entry was "that lands were reserved for railway purposes."

Now, very few of the claimants who gave evidence denied having knowledge of the reserve. On the contrary, nearly all of them acknowledged that they were aware of the reserve, when they went upon the lands they selected. But from what was said and from what was done by the Agent, they without question expected that the tract reserved would be thrown open to entry, and that they would each get the usual title to the lands they claimed. I, therefore, deem it advisable to give in this report the effect of many of the claimants' evidence upon this latter point.

Mr. Thomas Cassidy, a very intelligent though uneducated man, who gave his answers carefully and with evident desire to speak "nothing but the truth," stated that when he paid for his land, after obtaining a record for it, he thought he was paying for all rights, and that he did not know that he had not got them till he received the patent which was issued, for the surface rights only of his land, by this Department. He knew of the reserve, but "not being an educated man he took other people's word" that he would be safe in taking up the land; that he always believed that he would get the minerals, and that the agent had never told him he would not get them.

Mrs. Elizabeth Fiddick, who claimed from one John Grandam, who first located the land in 1875, stated that she was disappointed when she received the patent for it and found the minerals reserved.

Mr. George Vipond, who received a deed from the railway company for the surface rights only, gave evidence to the same effect.

Mr. Archibald Hamilton, who received a patent, issued by this Department, for the surface rights of the land he claimed, gave similar evidence.

Mr. James Patterson swore that when he paid for his land he expected he was paying for it "in its entirety," and that at first he refused to accept a grant for the surface rights only.

Mr. Samuel Jones stated that when he paid for his land he "expected to get it as all former settlers had got theirs;" that had he known his patent was going to contain the reservations it does contain he would never have paid for his land.

Mr. Daniel Webster Cochran, who received a deed from the railway company for the land his deceased father-in-law had taken up in 1877, never knew the minerals would be reserved until he got his deed.

Mr. Andrew McKinley, who first located his land in 1877, and applied to Mr. Fawcett in writing for it, has never received a deed for his land. He obtained a record for it from Mr. Bray in 1884, but stated positively that nothing was said about surface rights. He afterwards paid for the land, but did not consider the deed in the form used by the company was worth asking for. He would not take a deed in that form if one was offered to him.

Mr. William Hodson admitted that he knew of the reserve, but stated that he expected to get the minerals until he received his deed, that until then he always expected the same title to his land that settlers outside of the reserve got to theirs.

Mrs. Isabella Bates gave similar evidence. So did Mr. George Taylor, who although he had heard rumours that they wouldn't get the minerals, believed that as certain of his neighbours, who had obtained title to their lands by Provincial Crown grant, had got their minerals, he would get his. They paid \$1 per acre, so did he. Mr. Taylor also stated that he would not have paid for the land had he not expected the minerals.

Mr. William Jack stated that when he applied to Mr. Fawcett in 1876 a grant of lands without the minerals was unknown, that everything was covered by the Crown grant, except gold and silver.

Mr. George McGregor, who had paid for his land and who held a receipt for it, stated that he had never thought it worth his while to apply for a deed after he saw the form of a deed which was being issued by the Company, that he "wanted a home of his own the same as people got in other parts of the province," and that he did not consider he had got what he had applied for or what he had paid for.

Mr. Emmanuel Wiles did not want to take his deed when he saw the kind it was, and he only took it because "it was that or nothing."

Mr. William Morgan also stated that he didn't know he would only get the surface rights until he got his deed from the Company; thought when he paid for the land he was paying for both the surface and under-rights, and considered he had been "robbed of his rights."

Mr. Charles Bennie, who held nothing but a receipt for his purchase money, stated that he would not have paid for the surface rights only, and that he would not ask for a deed in the form used.

Mr. James Malpass stated that he first heard the minerals were reserved by the Clement's Act; that although a protest was made then he did not feel certain they would not get the minerals until he got his patent, and that he knew of the reserve when he

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first applied to Mr. Prior, but there was no such thing as a grant of the surface rights only known then.

Mr. Patrick Dolan gave similar evidence, so did Mr. John Hill

Mr. Isaac Emblen, a young Englishman, who had only come to the Province from Liverpool in 1882, and who stated that he had not even heard of the reserve, also stated that he was certain he was paying for both the minerals and the surface until he got his deed. He refused to accept his deed when he saw what his title was.

Mr. Lawrence Manson, one of Nanaimo's leading merchants, who became possessed of land located by one John Ead in 1879, and who paid his purchase money before he saw the patent which issued in Ead's favour by the Department of the Interior, stated he believed when he was paying his purchase money "he was purchasing the land entire;" although he was aware of the reserve of the Railway Belt, he did not know that the minerals were reserved until he got his patent. Mr. Manson also stated that his assessment notices for the taxes on the land, contained no reference to his being the owner of the surface rights only. The fact that Mr. Manson is a merchant and not a farmer or miner, as nearly all of the other claimants are, and that he did not know that the settlers were to be granted the surface rights only, is of itself strong proof that the provisions of section 23, of chapter 14 and of sub-section 2, of section 7, of chapter 6, had not been made known to the public as clearly as they should have been, if indeed they were ever made known except in so far as the passing and publication of the Acts which contain them, and the notice of the 7th May, 1884, made them known.

Mr. Thomas Rickard acknowledged he knew of the reserve of the land, but stated he expected to get everything, until he got his deed.

Mr. Joseph Hoskin's testimony on this point is to the same effect.

Mr. Samuel Bennie, whose title to all of his land, except 25 acres, is under Provincial Crown grant, which therefore, covers the minerals, and who when he found that most of the improvements, which it was thought were on the Crown granted lands, were on this 25 acres, applied for this piece of land, and in 1884 paid the \$1 per acre for it, would not take a deed for it in the form which was issued by the company to the settlers, as he considered two persons could not own one piece of land.

Other persons who appeared before me and whose names I have not mentioned gave similar evidence, and I may close my remarks upon this point with reference to a statement made by Mr. C. C. McKenzie, ex-M.P.P., whose business includes that of securing loans on mortgage security. Mr. McKenzie has lived in Nanaimo for many years, and because of his position and business should have known, it is assumed, what these settlers were to receive, in full satisfaction of their claims. In his evidence as a witness for Mr. Emblen, his statement that he advised Mr. Emblen and a Mr. Fiddick, another settler, not to take a deed in the form which was being used by the company, is a fair expression of a disinterested person's opinion upon the title that was being granted to the settler.

I think no further comment is necessary to support my opinion that the settlers had strong grounds for believing not only that they would receive title but ultimately receive the same title to the lands they claimed which other settlers, on lands outside of the tract reserved, obtained by Provincial Crown grant. Outside of the evidence I have referred to the possibility of a grant of the surface rights only did not arise until the Clement's Act was passed, and as nothing was done under its provisions, it must be acknowledged, in view of the purport of the sworn testimony of so many persons and of the action taken by Mr. Fawcett, Mr. Prior and Mr. Bray to protect them, at different times, with regard to their lands, that they were considered to be entitled to such lands, that the extent of such rights as understood by the settlers was well known, and that before they were deprived of any part thereof they were at least entitled to be heard. The blame does not attach to the above named gentlemen, to the officials of the Department of Lands and Works nor to the shareholders of the Esquimalt and Nanaimo Railway Company, but it does attach to those who are responsible for the provisions of the Provincial Act chapter 14, 47 Victoria, and of the Dominion Act, chapter 6, 47 Victoria, to which I have repeatedly referred. The officials who had to administer the law, appear to have gone beyond the powers of their office in holding for the settlers he lands they claimed. The shareholders of the railway company wanted the best



terms that could be secured, and they got them ; settlers' rights were no obstacle to be considered, and the necessary legislation was quickly and quietly obtained to trim down such rights to suit the wishes of the shareholders. The then Government of the Province of British Columbia is responsible for that legislation, and it is to a Government of that Province those who suffer from the injustice done, must look for redress. The duty of the then Dominion Government in the matter was only that of a trustee. True, the petition of 1882 received but the worst kind of attention, and similar indifference to these settlers' rights was displayed in the preparation and passing of the Dominion Act, chapter 6, 47 Victoria ; but the duty of safe-guarding the settlers in question was upon the Government of the Province.

When the provisions of chapter 14 and chapter 6 came to be administered, it was found, said Mr. Gore in his evidence, that no procedure had been thereby established under which the squatters' cases could be dealt with, and the laws in that behalf of the Province with regard to other lands were therefore adopted.

I produced to Mr. Gore the letters and schedules, forwarded by the Chief Commissioner of Lands and Works, upon which the Department of the Interior issued patents to certain of the squatters in question. A copy of one of such letters, and a copy of the schedule which accompanied it, which Mr. Gore identified, with the other originals, are attached hereto. So, also, are copies of a list of the patents issued by the Department of Interior, of one of such patents, and of the patent issued by the Department to the railway company. In reply to a question as to the duty of the Department upon receiving a letter and schedule such as those above mentioned, he answered that it was incumbent on the Department to issue patents in favour of the persons named in the schedule for the lands set opposite their respective names, for the surface rights only. The Department of the Interior, therefore, issued patents to settlers in accordance with such letters and schedules, as they were received, until the company had completed the line of railway between Esquimalt and Nanaimo, when the grant to that company was made. After that date the lands were administered by the company, and those settlers who had not received patents from the Department had to pay their purchase money to the railway company's agent at Nanaimo, and to accept deeds in the form which the company adopted for the purpose.

The Order in Council of the 30th November, 1896, which is referred to in my commission, and of which a copy is hereto attached, particularly relates to a tract of 86,346 acres of land for a grant of which, so that it might be conveyed to the railway company, application had been made, such area being the area of lands to which, according to the application, the Dominion Government was entitled, under the provisions of section 3 of chapter 14, as being "equal in extent to those alienated up to the date of this Act by Crown grant, pre-emption or otherwise, within the limits of the grant mentioned in section 3 of this Act," that is, within the limits of the tract of lands for which letters-patent issued to the company on the 21st April, 1887.

An impression prevailed when this Order of the 30th November, 1896, was passed that the mineral or under-rights of the lands so alienated had been granted to the company by the above mentioned patent of the 21st April, 1896, and that if the application now being referred to was acceded to the company would own the mineral or under-rights of the tract of 86,346 acres so alienated, and also of the tract of equal area referred to in the application.

A list of the alienated lands, the area of which amounts to 86,346 acres, was produced by Mr. Gore, when he gave his evidence before me, and a copy of it is attached hereto. It will be seen by referring to Mr. Gore's evidence with regard to this matter that the mineral or under-rights of such lands do not belong to the company, as they had been granted to the respective pre-emptors or grantees of such lands, by Crown grant, issued by the Province. I carefully examined the records in Mr. Gore's office and, outside of his evidence, satisfied myself that there were no grounds whatever for the position taken in the Order in Council of the 30th November, 1896, and that if no other obstacle exists, the application I have referred to should be acceded to without further unnecessary delay.

It is not out of place for me to note here that although a copy of the Order of the 30th November, 1896, was submitted to the Provincial Government in the usual manner,

## Department of the Interior.

and although attention was subsequently repeatedly called to it, no action has thus far been taken by the Provincial Government concerning it or the matter to which it relates

In view of all the circumstances which I have thought necessary to mention or refer to in this report, I consider it the duty of the Government of British Columbia, notwithstanding the position the settlers, who are affected by section 23 of chapter 14 and subsection 2 of section 7 of chapter 6 unquestionably placed themselves in by accepting pre-emption records, subject to such provisions, to take prompt action which will satisfactorily remove the injustice which has resulted from these provisions and which will end an agitation which was commenced when the provisions of section 19 of the Clement's Act were first known and which was resumed after the settlers found out that they had received or were to receive a grant of the surface rights only of the lands they had settled upon and, I think I may add without fear of contradiction, had been permitted to settle upon.

British Columbia, rich in her mines, her fisheries, her timber and other of nature's stores, gave bounteously of her most valuable lands to the builders of her Railway. Before such lands passed from her keeping it was the duty of the Province, the duty of those who were charged with the conduct of her public affairs, to make proper and sufficient provision for safe-guarding the rights of all settlers who went into occupation of any of such lands, under the circumstances which have been stated in this report. Such provision was not made, however, but, on the contrary, provisions which legalized the injustice against which the settlers had protested, were embodied in the Acts I have referred to. I repeat, therefore, that I consider it the duty of the Government of British Columbia to take such action as will promptly and satisfactorily remove the injustice.

I cannot close this report without expressing my appreciation of the assistance given to me by Mr. Gore, Deputy Commissioner of Lands and Works, at Victoria, and by Mr. Bray, Assistant Commissioner of Lands and Works, at Nanaimo, in my examination of the records of their respective offices with regard to this matter, or without drawing attention to the very intelligent and satisfactory manner in which Miss Barber performed the duties that were assigned to her.

I have the honour to be, Sir,

Your obedient servant,

T. G. ROTHWELL,  
*Commissioner.*

# SUMMARY REPORT

OF THE

# GEOLOGICAL SURVEY DEPARTMENT

FOR THE YEAR

1898

*PRINTED BY ORDER OF PARLIAMENT*



O T T A W A

PRINTED BY S. E. DAWSON, PRINTER TO THE QUEEN'S MOST  
EXCELLENT MAJESTY

1899

Geological Survey Department.

*To His Excellency the Right Honourable the Earl of Minto, Governor General of  
Canada, &c., &c., &c.*

MAY IT PLEASE YOUR EXCELLENCY:—

The undersigned has the honour to lay before Your Excellency, in compliance with 53 Vic., Chap. 2, Section 6, the Summary Report of the Proceedings of the Geological Survey Department for the year ending 31st December, 1898.

Respectfully submitted,

CLIFFORD SIFTON,

*Minister of the Interior*

JANUARY, 1899.

# Geological Survey Department.

## SUMMARY REPORT

ON THE

## OPERATIONS OF THE GEOLOGICAL SURVEY

FOR THE YEAR 1898.

OTTAWA, 15th January, 1899.

The Honourable CLIFFORD SIFTON, M.P.,  
Minister of the Interior.

SIR,—In accordance with the provisions of the Act relating to the Geological Survey, I have the honour to submit the subjoined Summary Report of the work carried out by the Survey during the calendar year 1898, giving, in abstract form, an account of the explorations and surveys completed or in progress, together with a record of the investigation conducted in the office, publications, additions to the collections, organization, changes in the staff and other matters relating to this Department of the public service.

In work like that carried on by the Geological Survey, much is necessarily dependent on the initiative of individual members of the staff, and these gentlemen are consequently requested to embody in the preliminary reports on their operations, in as much detail as may appear to be desirable, the more important results of their investigations, particularly such as may be of immediate value to the public from an economic standpoint. This is the more appropriate and necessary in view of the fact that the complete examination of any particular district or subject, must often occupy several years of field-work before it can be completed, and further time may have to be occupied in the examination of specimens, the collation of results and the compilation and engraving of maps before the whole can be prepared for issue in the form of a comprehensive report.

Information given in Summary Report.

In order to facilitate as far as possible the early appearance of such finished reports, it has been the custom for some years to print and issue each of these in separate form, as soon as completed. Such separate issues are subsequently collected in an annual volume, for per-

Separate publication of completed reports.

manent record and for distribution to Parliament and to such libraries, public institutions and exchanges as are entitled to receive it.

Issue of  
Volume IX.

In consequence of pressure of work in the Printing Bureau, it was not possible to complete Volume IX. of the new series of Annual Reports in the early part of the past year, but this volume has now been printed, bound and issued in English, while the French edition is approaching completion. It contains, as usual, the Summary Report of the year which gives nominal date to the volume, (thus carrying on the general record of the operations of the Department,) and six other separate reports, as follows :—

Contents.

Summary Report of the Geological Survey Department for the year 1896, by the Director.

Report on the Doobaunt, Kazan and Ferguson Rivers and the North-west Coast of Hudson Bay, by J. B. Tyrrell.

Report on the Geology of the French River Sheet, Ontario, by R. Bell.

Report on a traverse of the northern part of the Labrador Peninsula from Richmond Gulf to Ungava Bay, by A. P. Low.

Report on the Geology of South-west Nova Scotia, by L. W. Bailey.

Report on the Section of Chemistry and Mineralogy, by G. C. Hoffmann.

Report on the Section of Mineral Statistics and Mines, by E. D. Ingall.

The volume comprises 816 pages, and is accompanied by five maps and illustrated by twenty plates, besides a number of figures in the text.

Reprint  
of Yukon  
reports.

The reprint of the Report on the Yukon District, from Volume III. (N.S.) with parts of a subsequent report on the same district from Vol. IV. (N.S.) together with that of the three large map-sheets accompanying the first-mentioned report, was completed early in the year. This publication of 244 pages, practically embodied all the geological information available on the district to date, and the maps were corrected to January last.

Other  
publications.

In the palæontological series of publications, Part V. completing Volume I. of *Contributions to Canadian Palæontology*, was issued at the end of November.

The preliminary statistical abstract of the mineral production of Canada, for 1897, was completed and sent to the printer on February 23rd, 1898.

## Geological Survey Department.

The number of maps actually printed during the year, is thirteen. Particulars are given of these and of those in progress, on a later page. The new general geological map of the Dominion, referred to in a previous Report, has been somewhat delayed by difficulties connected with the engraving work, but is now again progressing satisfactorily.

The printing of Volume X. of the new series of reports is now in progress, the following constituent parts being in press :— Progress of  
Volume X.

Report on the Geology and Natural Resources of the area included by the Nipissing and Temiscaming map sheets.

Report on the Surface Geology and Auriferous Deposits of South-eastern Quebec, by R. Chalmers.

The Mineral Resources of the Province of New Brunswick, by L. W. Bailey.

Report of the Section of Mineral Statistics and Mines, by E.D. Ingall.

Progress also continues to be made in the printing of the General Index of the reports of the Geological Survey, from 1863 to 1884, alluded to in the last Summary Report, and it is hoped that this may now shortly be published.

The aggregate value of the production of minerals in Canada during the year 1897, as finally corrected and published, is \$28,661,430, being an increase of about 27 per cent over that of the previous year. This is largely accounted for by the great development of gold mining, particularly in the Yukon district, the value of the gold produced being more than double that for 1896. Several other mineral products, however, likewise show a very significant growth, the percentage increases in value of some of these being as follows, according to the figures obtained by the Section of Mineral Statistics and Mines :—lead 93·7, silver 54·6, copper 46·9, gypsum 37·3, cement 36·5, nickel 17·7. Increasing  
production of  
minerals.

The returns for 1898 are at this time by no means complete, but they are sufficiently known to indicate that a further increase of 25 to 30 per cent in value will appear in this year as compared with 1897. As before, however, a large proportion of this increase is attributable to placer gold mining in the Yukon district.

A small representative collection of Canadian ores and minerals of economic value, with photographs of mines, etc., was prepared early in the year for display at the Trans-Mississippian Exhibition at Omaha. This was despatched, together with other exhibits, in charge of officers appointed by the Minister of Agriculture. From accounts since Collection  
exhibited at  
Omaha.

received and from correspondence relating to this collection, it appears that it attracted a good deal of attention on the part of miners and prospectors from the Western States of the Union.

Preparations  
for Exhibition  
at Paris.

The collection has since been returned, and some part of it will now be available for the much larger and more complete display of the mineral resources of Canada which it is intended to make at the International Exhibition in Paris in 1900. Much additional material will, however, be needed for this purpose, and toward the accumulation of this some preliminary steps have already been taken. It is hoped that the active co-operation of all those engaged in mining or metallurgical industries in Canada may be counted on in the effort to make the mineral and geological exhibit a thoroughly creditable and representative one, as the occasion afforded by this exhibition appears to be one of which the greatest possible advantage should be taken.

Importance of  
this Exhibi-  
tion.

Communications are invited, in the above connection, from those interested in mining matters. It is desired, not only to exhibit mineral products for which markets may be found in Europe, but those also in which the numerous visitors from all other parts of the world may be interested; and it may be pointed out that, even in the case of products for which the chief market is to be sought in adjacent parts of the United States, no better means can be adopted of making them known than that of their proper representation at Paris. It is also to be borne in mind that the adequate display of substances of purely local consumption, will at least evidence their existence in the Dominion and that of the industries depending on them, attracting the attention of those engaged in similar industries or interested in connected processes and machinery, as well as inducing the immigration of workmen skilled in such industries.

Specimens  
sent to Imper-  
ial Institute.

Specimens of minerals of commercial importance have been sent from time to time, during the year, to the Imperial Institute in London, some in response to inquiries, others, when there appeared to be a good prospect of establishing a profitable market for them. Some trouble has been taken, for instance, to obtain representative specimens of Canadian feldspars from deposits capable of yielding this mineral in large quantity, and some of these have been experimentally fused in the kilns of the Ottawa Carbon and Porcelain Company and forwarded in that condition, together with the crude material. Feldspar is extensively employed in the manufacture of pottery and porcelain, and if it can be laid down at the works in England at a satisfactory price, although the percentage of profit to be anticipated is small, there is no reason why the industry may not assume very large

Feldspar.



## Geological Survey Department.

proportions, the Canadian material being apparently quite equal to that produced in Scandinavia. Considerable shipments have already occurred to potteries in the United States.

Molybdenite is another mineral for which a considerable and growing demand appears to have been established, particularly in connection with the employment of molybdenum in alloys of iron and steel. Mr. Willimott was instructed in July to visit and report upon some of the best known and most accessible occurrences of this mineral, and specimens of the more important of these deposits were sent to the Imperial Institute. As a result of this, prices were quoted for the mineral, in England, that appear to afford a good margin of profit for the working of some at least of these deposits. Large samples were also obtained from a couple of the deposits, for the purpose of ascertaining whether it might not be possible to crush and concentrate the ores containing a comparatively small amount of molybdenite. The concentration of this ore has not, so far as I am aware, yet been attempted, but acting on the kind offer of Professor J. B. Porter of McGill University, Montreal, the samples referred to have been transmitted to him and are now being made the subject of experiment in the mining laboratory of the University.

In connection with the above and other mineral substances which Canada is capable of producing and supplying to new markets, I may add that the greatest difficulty has been found in inducing the owners of deposits of the kind, not previously worked, to make even trial shipments of their products. Many proprietors are ready to sell undeveloped properties at good prices, but are either unable or unwilling to put the matter on a commercial basis. The inquiries received are not as a rule directed to the acquirement of deposits, but to the practical question—at what price and in what quantity can a given mineral be delivered at a stated market. The acquisition and locking up of mineral deposits for purposes of speculation only, has in fact become a serious deterrent to the development of Canadian mining, to which the attention of the proper authorities in the several provinces might, it is believed, be usefully directed.

Among the minerals for which special inquiries have been received during the year, the following may be mentioned. Some of these have not yet been found in Canada, or not in quantities that appear to be of commercial importance, but most of them may be looked for, in different parts of the Dominion, with prospects of success, while others are already well known.

Asbestos, Antimony ores, Bismuthenite, Corundum, Chromic Iron, Felspars, Fire Clays in British Columbia and the North-west Territories,

Fluorspar, Graphite, Gypsum, Iron-pyrites, Iron Ores (Bessemer and titaniferous), Limestone (pure, for manufacture of calcium carbide and dolomitic or magnesian limestone for use in connection with wood-pulp manufacture), Molybdenite, Mispickel in Ontario, Mica, Marble for ornamental purposes, Magnesite, Natural Gas in Quebec, Nickel, Osmium, Platinum, Pottery-clay in the North-west, Peat, Phosphate or Apatite, "Quartz" for paviers of grinding-pans, Sand for glass-making and for "sand-blasting," Steatite or Soap-stone, Talc, Tungsten ores (wolframite or scheelite), Zinc ores.

Nearly all the substances above noted were required for purchase or immediate utilization in connection with different industries, and a large proportion of the inquiries came from Great Britain, the United States and the continent of Europe. Whenever possible the inquirers have been either placed in correspondence with persons working or owning the minerals asked for, or have been informed of the localities and under what conditions these minerals are known to occur.

Information  
supplied by  
the Depart-  
ment.

As usual, a very large number of applications have been received by the Department for information of various kinds, referring to mines and minerals, geological and geographical points and a wide range of other technical subjects. Much of the correspondence of the office relates to such questions, many of which require some time and research in order to obtain or collate the facts asked for. This is particularly the case in connection with boring operations, and the very numerous samples of rocks, ores, fossils, botanical and geological specimens, etc., sent in for examination or determination. It may be added, that, while the Department is ready to undertake such examination and determination of minerals, etc., as may appear to be necessary or reasonable in each case, assays or analyses of ores and minerals are made only in the case of those that appear to be of public interest or importance.

Educational  
collections.

During the past year, twenty-five collections, comprising an aggregate number of over 2000 specimens, have been prepared and presented gratuitously to approved educational institutions in various parts of Canada. The number of such collections that can be made up being necessarily limited, while the demand for them appears to be a continually growing one, more care is now necessarily taken than in former years to ascertain that the institutions supplied are of such a grade that specimens of the kind can be beneficially employed in them. In the case of schools in which natural science forms no part of the curriculum, it would appear that but little use can be made of such collections, the cost of which to the Department is considerable, in time and work, as well as in the expenditure annually necessary to procure suitable material.

## Geological Survey Department.

While it is necessary in this Report to again allude to the ever-present danger of the loss by fire of the valuable collections and records of the Survey, still housed in the old and inadequate building on Sussex Street that has been occupied since the removal from Montreal, it may be added that there now appears to be some prospect of the early erection of a new and spacious fire-proof building. It should be fully recognized that the loss of the collection, with its numerous "type" specimens, resulting from the work of the staff for more than fifty years, would not only be a national calamity, but one which would be deplored by scientific workers the world over. The rapidly increasing importance of mining in Canada, alone, should ensure the immediate provision of suitable quarters for the museum and staff of the Survey, in which it may be possible to afford something like an adequate presentation of the mineral resources of the country to all visitors to the capital.

Museum building required.

In connection with the value of type specimens, of whatever kind, the following observations by Professor O. C. Marsh, being part of a communication made by him to the International Congress of Zoology at Cambridge, England, in August last, may be quoted here, as the importance of such specimens is not so generally understood as it should be :—

Safeguarding of type specimens.

"The careful preservation of their own type specimens is a sacred duty on the part of all original investigators, and hardly less so of those who are the custodians of such invaluable evidences of the progress of natural science. \* \* \* For the preservation of type specimens, fire-proof buildings are indispensable. I recall no less than five Museums of Natural History, in America, that have either been destroyed, or their contents consumed, or seriously damaged by fire, since I became actively interested in natural science."

Necessary routine work in the office, together with the supervision of the publication of the reports, has occupied the greater part of my own time during the year, but it was found possible also to make some excursions in the field, in connection with the general control of the work there in progress and for the purpose of correlating the surveys and observations of different members of the staff. This forms a very necessary part of the scheme of the Survey, which implies a uniformity of plan in the definition and mapping of the formations of all parts of Canada. It is recognized that such supervision should not be confined merely to the published matter of the several reports, but should include an actual knowledge of the main facts, of such a character as to enable the Director to assist the individual workers in reaching a concurrent rendering of their results for presentation to the public. An extension

Work of the Director.

of consultary relations of the geologists working in adjacent fields, is also to be desired and it is hoped that this may be more fully attained in future.

Visit to  
Rivière  
Blanche.

Early in May, at the request of and in company with the Hon. Sir Henri Joly de Lotbinière, a day was spent in a visit to the scene of a disastrous landslip that had occurred on the Rivière Blanche, in Portneuf county, Quebec. The peculiar features of this landslip appearing to merit further investigation, Mr. R. Chalmers was subsequently instructed to visit and examine the place. Some notes on the occurrence are given in his report, below, and I have also presented a short account of the disturbance, dealing particularly with its geological aspects, to the meeting of the Geological Society of America, lately held in New York.

Mines at  
Calumet  
Island.

At a later date, advantage was taken of an excursion to the Calumet Mining Company's property, to visit the interesting deposits of lead and zinc ores which are being worked by that company on Calumet Island in the Ottawa River. Dr. R. W. Ells has embodied some notes on this mine in his report, given on a later page.

Inspection of  
boring work,  
etc.

In August, it became desirable that a personal inspection should be made of the boring operations in progress in northern Alberta, and on the 10th of that month I left Ottawa for that purpose, going as far as Victoria, on the Saskatchewan, and spending a few days at Edmonton and in its vicinity. Subsequently, visits were made to Kamloops and Vernon in British Columbia, in connection with further details required for the Shuswap map-sheet, now nearly ready for issue, after which the Crow Nest Pass railway was taken to Fernie, for the purpose of noting the progress made in opening up the coal-field traversed by this line, with a view to further geological surveys. Ottawa was reached on my return, on September 13th.

Localities  
visited in  
Nova Scotia.

Leaving Ottawa again on September 25th, nearly two weeks were spent in Nova Scotia in connection with the geological questions which have arisen in regard to the mapping of some of the rock-series in that province. In company with Dr. H. M. Ami, who had been instructed to continue his work of obtaining all possible palæontological evidence on the points at issue, visits were made to representative sections in the vicinity of Wolfville, Horton, Parrsborough, Harrington River, Union and McAras Brook, Arisaig. Dr. Ami in his report presented in a later part of this Summary, gives some account of the results so far reached by him in the investigation, on which he has been employed for a part of each summer during several years. These results are of importance, inasmuch as the issue of several maps, now

## Geological Survey Department

engraved, had to be delayed pending the determination of the taxonomic position to be assigned to some of the formations included by these sheets. The inspections which I have made in this connection, enable me to characterize the stratigraphical work, which on these map-sheets has been chiefly carried out by Mr. H. Fletcher, as most complete and accurate ; so that whatever differences of opinion may still remain in regard to the age to be assigned to the formations in question, must depend upon the weight to be given to the fossils contained in these rocks in their relation to palæontological standards, recognized by geologists generally in other parts of the world.

While at Edmonton, I embraced the opportunity of gaining some further information in regard to the gold of the North Saskatchewan. Much interest is now being taken in this question in connection with the introduction of dredging machinery on a considerable scale, and a short general review on the subject may thus appropriately be given here.

Gold on the  
North Sas-  
katchewan.

The occurrence of placer gold on the Saskatchewan and other rivers in Alberta and Athabasca, its distribution and the sources from which it may have been derived, have been referred to in several previous reports of the Geological Survey ; but recent systematic efforts to establish dredges for gold mining on the North Saskatchewan, together with certain late additions to our knowledge of the problems involved, seem now to warrant a further notice of the subject.

Previous  
reports.

Gold in fine scales and particles, generally so minute as to require the employment of mercury in collecting it, is now known to occur on almost all the rivers running eastward from the Rocky Mountains, to the north of the International boundary, wherever these have been prospected. To the south of the Peace River, this gold, in any workable quantity, seems invariably to characterize a portion of the length of each of the rivers, giving out to the westward before the base of the Rocky Mountains is reached, and to the eastward along a less well defined line, but one probably due, in this case, to the local substitution of sand and clay banks and bed for the gravel bars of the upper and more rapid parts of the streams. The Peace River and the Liard, rising to the west of the Rocky Mountains proper, among rocks known to be auriferous, contain more or less gold throughout their lengths, or to points in their lower courses where the changed conditions of flow, above alluded to, render the collection of any minutely divided gold which they may still carry practically impossible. In other words, in these two rivers, and possibly also in some still further to the north, a considerable part at least of the contained gold comes directly from their upper tributaries ; while in the case of the Athabasca, the North

Occurrence of  
the gold.

Saskatchewan and other rivers further to the south, the evidence at first sight appears to be entirely against the possible derivation of gold from the mountains to the westward.

Dr. Selwyn on  
Saskatchewan  
gold.

In the Report of Progress for 1873-74, (p. 58) Dr. Selwyn, who had descended the North Saskatchewan in a boat in 1873, notes that the first signs of gold washings were observed rather more than forty miles below the mouth of the Brazeau, and continued for some miles below Edmonton. He states his belief that the gold is not derived from the mountains, as none of the miners had ever been able to find any above Rocky Mountain House, and his conclusions are that it came as a part of the glacial drift, with the Laurentian and other crystalline rocks derived from the belt which extends north-westerly from Lake Superior to the Arctic Sea.

Gold n  
southern  
Alberta.

In my report on the southern part of Alberta, contained in the Report of Progress for 1882-84 (p. 152 c.) it is noted that fine gold is found, when looked for in favourable localities, in all the streams in that region, but ceases to occur before the base of the mountains is reached, at or near the western limit of the glacial drift from the eastward. The facts are considered fully to confirm the hypothesis advanced by Dr. Selwyn.

Mr. Tyrrell on  
Saskatchewan  
gold.

Mr. J. B. Tyrrell's report on Northern Alberta, forming part of the Annual Report, Vol. II. (N.S.) 1886, (pp. 109, 164, 131 E.) contains additional observations on the occurrence of gold. Near Goose Encampment, on the Saskatchewan, about fifty-five miles above Edmonton by the river, on Sections 35 and 36, Township 50, Range IV., west of the Fifth Meridian, are extensive exposures of the Lower Laramie rocks, including a very thick bed of lignite-coal. At this place the coal has been largely burnt out, leaving mounds and slopes of vitrified materials baked shales, etc., and specimens of these and of the ash of the coal-bed were proved on assay to contain traces of gold. The gold must, of course, have existed in these rocks previous to the combustion of the coal, but it may have been to some extent concentrated in the specimens showing actual fusion. It is noted by the author that this is about the highest point at which gold in paying quantity has been found on the river, and that the miners state it is in this vicinity found in a somewhat coarser form than usual. The occurrence of gold in the Laramie rocks, Mr. Tyrrell points out, involves, in connection with the origin of gold on the Saskatchewan, the origin of the materials of these rocks; and this, he explains, may have been in the Selkirk Ranges of British Columbia, at a time antecedent to the elevation of the Rocky

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Mountains proper. He finds no reason to deny, however, that some part of the gold may have been received from the eastern glacial drift.

In 1895, when for a short time at Edmonton, some further notes on the gold industry on the Saskatchewan were obtained by the writer. Observations in 1895. These are referred to in the Summary Report for that year (p. 16 A), where it is stated that the principal paying bars occur along that part of the river extending from about sixty miles above to about sixty miles below Edmonton, but that in late years bars had been worked as far down as Battleford, some 250 miles below Edmonton. The number of men employed in gold mining, for longer or shorter periods in that year, was estimated at about 300. In consequence of favourable reports brought back by a few miners from the Athabasca, a rush occurred also to that river, but without leading to any important results, as the men going there were for the most part inexperienced in gold washing.

In the same year, the first dredge of any considerable size was built at Edmonton, with the intention of working the submerged bars and the bed of the river, although previous to this time hand dredges and scoops of various kinds had been operated with some success. First dredge constructed.

The writer was then also informed of the working of certain gravel deposits by drifting, in the banks of the river, and of the occurrence of gold in gravels met with in sinking wells in the prairie land at some distance from the Saskatchewan. It appeared to be probable that, while some of these gravels were recent and strictly fluvial, such as those underlying flats along the river-valley, others were referable to the deposit named "Saskatchewan gravels" by Mr. R. G. McConnell; a deposit that underlies the glacial drift of the Great Plains. As no opportunity occurred at that time of testing the last-mentioned conjecture, it was not referred to in the Report cited; but when, in the following year, Mr. McConnell had occasion to visit Edmonton in connection with the selection of a site for boring operations, he was requested also to examine the places at which such drifting had been carried on in the gold-bearing gravels. Gold in old gravel deposits.

Mr. McConnell's examination then made, proved the existence of gold in workable quantity in some parts of the "Saskatchewan gravels" underlying the boulder-clay of the plains. At a point about ten miles above Edmonton, he noted the following section in the bank, in descending order :— Mr. McConnell's observations.

	Feet.
1. Silts and clays.....	7
2. Boulder-clay.....	50
3. Cross-bedded sands.....	60
4. Sandy gravel carrying gold.....	3
5. Laramie sandstones and shales to water level.	50
	170

He also reported that another deposit, evidently of the same character from descriptions received, was about to be worked some sixty miles above Edmonton.

Character and origin of the old gravel deposits.

Without entering into details which have been presented elsewhere, respecting the "Saskatchewan gravels," it may be explained that the deposit so named is widely distributed in the North-west, and that it has been shown to be connected with the earliest period of glaciation there, during which the western mountain region was the main source of ice. These gravels and associated sandy beds, rest directly upon the Cretaceous or Laramie rocks, and have been carried far eastward by rivers and streams discharging from the glaciers of the eastern slopes of the mountains. Their material is consequently almost entirely derived from the mountains, but none of it can be proved to have come from ranges west of the Rocky Mountains proper. They do not contain débris from the crystalline rocks of the Laurentian axis to the east and north-east, but underlie the boulder-clays characterized by an abundance of such material in the area of the Great Plains. The gold occurring in these gravels must, consequently, have been derived either from the Laramie rocks, noted as slightly auriferous by Mr. Tyrrell, or from the Rocky Mountains proper, or in part from both sources.

Possible secondary derivation of gold.

It may be pointed out that, although no auriferous veins have been found in the Rocky Mountains proper, the sandstones and conglomerates of the Cambrian rocks of these mountains have in long past ages been built up of débris from the Selkirks and connected ranges to the west, that are known to comprise ancient crystalline and metamorphic rocks and to carry gold. It is therefore not at all improbable that, in the wearing down of the Cambrian strata of the Rocky Mountains, considerable quantities of gold originally derived from the Selkirks has again been liberated and has been washed down with the material of the "Saskatchewan gravels." To this cause may probably be attributed the occurrence of small quantities of gold on the Miette River, a tributary of the Athabasca in the mountains, as mentioned by Mr. McEvoy in his report on a following page. It is noteworthy,



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however, although these gravels, or the boulder-clay of western origin with which they are connected, continue to the base of the mountains, that, as already stated, gold practically ceases to the west of a certain line. This appears to show that the gold in these gravels is either far from abundant or that its distribution is local,—possibly that it is due more largely than one would be inclined to believe, to denudation of the underlying Laramie rocks. In this connection it may be added that, while at Calgary last autumn, Mr. J. McEvoy, at my request, tested the Saskatchewan gravels there for gold with entirely negative results.

Not every-  
where found  
in older  
gravels.

The result of recent observations appears, therefore, to indicate that the gold found in the Saskatchewan and other rivers of the North-west, has come in part from several sources, but has been derived chiefly from the crystalline rocks of the Laurentian axis or plateau to the eastward or north-eastward, from which it has been transported with the fragments of these rocks that now form so conspicuous a part of the "drift" of the Great Plains. The recognition in late years, of the Huronian as a distinctly gold-bearing formation, in itself goes far to establish the correctness of the hypothesis originally advanced on this subject, as rocks of this formation occupy considerable areas of the Laurentian plateau.

General result  
of inquiry.

The gold, in workable quantities, characterizes parts of the rivers crossing a belt of country that extends from the vicinity of the base of the mountains, for a variable distance eastward. This distribution has led to a popular belief that some ancient system of streams has carried the gold from north-west to south-east, or in the opposite direction, parallel to the base of the mountains, forming a wide belt of auriferous alluvium in the direction of its flow. What has already been said will, however, show that the existence of such a belt is in all probability due to other circumstances, and that the gradual cessation of payable bars along the rivers to the eastward, results chiefly from the diminished slope of the country and the consequently reduced erosive and sorting power of the existing rivers.

The North Saskatchewan, has hitherto been by far the most important stream upon which gold mining operations have been carried on, and is the only one which has offered a continuous and somewhat considerable output of gold. The length of the river upon which work has been found to pay, under favourable conditions, is, as already defined, about 120 miles; Edmonton being situated almost in the centre of this length of the river. Up to the present time, gold washing has been prosecuted almost entirely by hand or with the aid only of very rude mechanical appliances for lifting small quantities of gravel from

Gold mining  
on North Sas-  
katchewan.

the submerged bars and bed of the river. The prosecution of this work has been desultory, being practically limited to the low-water stages of the river, and even then conducted by a number of men who, generally, wish to devote only a part of their time to such work ; influenced largely by the inducements offered by employment in other directions. It must be added, however, that experience here, as elsewhere in regard to river-bar mining, shows that the best returns are obtained from the first working of such bars, and that, although more or less re-arrangement of material and renewal of accessible gold is brought about each year when the river is in flood, the naturally exposed bars rapidly deteriorate in their yield. For this reason, except at unusually low water, a number of the miners now devote themselves to the working of layers of gravel covered by lighter sandy deposits along the banks of the river, and that these often carry a considerable amount of gold, is shown by the fact that some men were engaged, with profit, during the past year (1898) in removing from five to eight feet of sand, shovelling underlying gravel from the pit thus formed, wheeling it thirty or forty yards to the edge of the river and washing it there by hand with an ordinary "grizzly."

First work on bars most remunerative.

Dredges on the North Saskatchewan.

The steam dredge constructed in 1895, and to which allusion has already been made, was at the time of my visit to Edmonton last autumn, laid up some way up the river, and no favourable accounts were received of the results so far attained. I was able, however, to visit the other steam dredges on this part of the Saskatchewan, beginning with that of the Star Mining Company of South Edmonton.

Star Mining Company.

This was found at work about two miles above Big Island (or thirteen miles above Edmonton). It has a twelve horse-power engine and is capable of raising gravel from a depth of about ten feet. Three men and a boy were employed and the returns were stated to amount to from \$25 to \$40 worth of gold per diem. The gravel is said to average about 40 cents worth of gold to the cubic yard, without the very fine gold, which is known to be lost because of the comparatively imperfect construction of this small dredge. This dredge is stated to be paying well.

Loveland Brothers.

A much larger dredge, belonging to Loveland Brothers, was found at work in the channel south of Big Island. This is a well constructed machine, with two twenty horse-power engines, one to actuate the bucket, the other to pump water for washing the gravels raised. It had just been completed and some of the appliances were of a temporary character, and no records of work were available. About two miles above Edmonton, a small dredge belonging to Dr. Bowers was visited, but was not at work. Like those above described, it is a

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dipper dredge, but is provided with a truck drawn upon inclined rails to the stern, where the gravel is screened in a revolving perforated drum before washing.

Another dredge, belonging to Mr. Braithwaite, was lying at the bank of the river near Edmonton. This is provided with a small engine for pumping water. It has two longitudinal wells in the hull, in each of which a bucket or scoop attached to a beam is operated. Another dredge, belonging to Mr. Brindley, lay not far from the last, but is still simpler in construction. It is said to produce about \$10 worth of gold a day when at work, but had lately been employed in connection with the foundations of the piers of the bridge under construction. There are also several small hand dredges of primitive construction employed by miners at various places along the river, not specially noted.

Other dredges  
on the river.

All the dredges above referred to are dipper dredges of varying construction. On the south side of the river, at Edmonton, a large new dredge, the first of several which it is intended to build, was approaching completion. This belongs to the Saskatchewan Gold and Platinum Proprietary, (limited,) Mr. A. E. Hogue, general manager, and is in every way a great advance upon any dredge heretofore placed upon the river. It is to be provided with four engines, one to actuate an endless chain of buckets, one for the winches by means of which the dredge will be moved from place to place, and a couple to pump water to wash the gravel. It is intended to raise the gravel to a height of twenty-five feet above the deck, where, after the removal of the larger stones by a grizzly, it will be screened in revolving drums and the finer residue treated on blanket-covered Frue vanners placed on the after-part of the deck. This dredge was completed late in the autumn, but not in time to practically test it. Its working capacity is stated to be 3100 cubic yards of gravel in twenty-four hours.

Dredges  
under con-  
struction.

The chief progress in river-dredging for gold, in late years, has been accomplished in New Zealand, where work of this kind has been carried out extensively, improved methods have been devised and an important industry established. An interesting synopsis of this work has recently been given by Mr. J. B. Jaquet, of the Geological Survey of New South Wales.\*

Gold dredging  
in New  
Zealand

It appears that in New Zealand, spoon dredges, rigged on scows and operated by hand windlass, were first employed with some success

Progress and  
improvements.

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\* Notes on gold dredging by J. B. Jaquet, Geological Survey of N.S.W. Government Printer, Sydney, 1898. Price 1s. 6d.

locally. Sand-pumps or suction-pumps were then tried, but, as in the western part of the United States, proved to be unsatisfactory. Steam bucket-dredges were then introduced and successfully worked. These soon superseded all others, and the tendency now is to build them of increasing size and capacity. Electric motors have also been employed with advantage. A great improvement was effected by the introduction of what is known as a tailing-elevator, which prevents the tailings from finding their way back into the excavation made by the buckets, and enables them to be stacked, from the stern of the dredge, where desired; in the case of the larger dredges to a height of forty feet above the water-level. By means of this arrangement the dredges can work the low river-flats, cutting channels for themselves, and can even attack gravel banks twenty-five feet in height.

Saving the gold.

In saving the gold, various ingenious devices are employed, in regard to the details of which reference should be made to Mr. Jaquet's report. The greatest advance recorded is that of the introduction of revolving screens with water-jets.

Economy of working.

By perfected appliances of the kind above alluded to, extremely finely divided gold may be saved, actual experiments having shown that particles as minute as one-thousandth of a grain in weight are successfully collected. An instance is quoted showing profitable work in ground yielding only 1.35 to 1.41 grains ( $5\frac{1}{2}$  to  $5\frac{3}{4}$  cents) per cubic yard, and in Montana, the running cost of working gravels with steam power has been reduced to 9 cents per cubic yard, or with electric power, as low as  $4\frac{1}{2}$  cents.

Favourable prospects on the Saskatchewan.

There appears to be no reason to doubt that satisfactory results, comparable with those achieved in a number of cases in New Zealand, may be obtained on several rivers in the North-west, and more particularly on the North Saskatchewan. Properly constructed dredges of adequate size and capacity will permit work to be carried on continuously during about half the year. It is to be remembered that such dredges enable the working not only of the bars and bed of the river, but also of the adjacent river-flats, where these do not possess a greater and more permanent value for agricultural occupation. Many of these flats are known to be underlain by auriferous gravels which have never yet been touched.

Annual yield of gold.

The approximate annual yield of gold from the North Saskatchewan, since 1887, is thus given in the report of the Mining and Statistical Section of the Survey for 1898. It must be borne in mind that very considerable amounts had been recovered in still earlier years, for which no figures are available; also, that practically the whole of the yield stated up to the present time has been the result of hand work.

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### *Value of Gold obtained from the North Saskatchewan River.*

Year.	
1887.....	\$ 2,100
1888.....	1,200
1889.....	20,000
1890.....	4,000
1891.....	5,500
1892.....	10,506
1893.....	9,640
1894.....	15,000
1895.....	50,000
1896.....	55,000
1897.....	50,000
	\$222,946

Before leaving the subject of the auriferous drifts of this part of Alberta, occasion may be taken to allude to a couple of interesting finds lately made in connection with the old gravel deposit specifically named the Saskatchewan gravels. In 1895, I obtained from Mr. J. Gibbons, the tooth of a mammoth, which had been discovered in the workings carried on in these gravels some six miles above Edmonton. This is probably referable to *Elephas primigenius* or *Americanus*. A rather small but well preserved mammoth tusk was also seen by me at Edmonton last year. This was picked up on a river-bar near Goose Encampment, but from which of the beds in the river-banks it may have been derived is uncertain. Last autumn, from Mr. D. W. Macdonald, of Edmonton, portion of a skull was received which proved to be that of a musk-ox. This was from the roof of a drift, run into the bank for coal-mining purposes about a mile below Edmonton in which a fall had occurred in connection with the work. It, in all probability, was likewise derived from the Saskatchewan gravels, which here, with a variable depth, directly overlie the coal-bearing Laramie rocks. A preliminary examination of this somewhat imperfect specimen, develops no points of difference between it and the old adult skull of *Ovibos moschatus*. Although a long way south and west of the present range of the musk-ox, it is to be noted that two species of this animal have previously been described from Pleistocene beds in Kentucky and on the Arkansas River, which Flower and Lydeker suggest may be referable to the existing form.\*

It is possible that the remains above noted from the Saskatchewan gravels, may have been derived from superficial deposits antedating

Mammoth and musk-ox remains in the older gravels.

Date of these remains.

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\* Mammals Living and Extinct, p. 360.

these gravels and therefore of Pliocene age, but it is much more probable that the mammoth and musk-ox actually inhabited the region in the early Pleistocene, at a time when the mountains to the west were buried under the mass of the Cordilleran glacier.

Crow Nest  
Pass coal-  
field.

The following notes refer to the development of the Crow Nest Pass coal-field, now in progress.

Fernie Station, on the Crow Nest Pass Railway, is situated in the Elk River valley where Coal Creek enters this valley from the east. A range of 100 coking-ovens of approved type was in construction here at the time of my visit, early in September, and since then fifty of these ovens have been completed and the actual manufacture of coke has commenced by the Crow Nest Pass Coal Company (limited). Houses for the miners have also been constructed at Fernie and a town-site has been laid out. From Fernie, a spur line has been built up the valley of Coal Creek for about five miles, to the place at which the actual mining operations are in progress. Although bounded on both sides by mountains several thousand feet in height, the valley here opens out considerably, affording ample room for a large loading yard, as well as for the construction of the necessary bins, screens and other appliances for handling the coal. Work upon these appliances was actively in progress when seen.

Mining work  
in progress.

Here, under the immediate superintendence of Mr. W. Blakemore, the outcrops of the coal-seams have been uncovered and drifts have been run in on both the north and south sides of the valley. The beds here belong to the west side of the coal-basin and have an easterly dip at an angle of about twenty degrees. The principal seam opened on the north side of the valley, according to Mr. Blakemore, yields 5 feet 6 inches of workable coal, while that on the south side is about 6 feet thick. The relative stratigraphical position of these two seams has not been accurately determined, owing to landslides at the base of the mountain slopes, but it is believed that the seam on the south side (known as No. 2) is from 80 to 100 feet above the other, the intervening rocks being chiefly sandstones, but possibly, in accordance with Mr. Fernie's views, including a third and much thicker coal-seam. It is proposed to decide this point, at an early date, by further work.

Exploratory  
work on  
Michel Creek.

Exploratory work was also being carried out by Mr. Fernie in the valley of Michel Creek where followed by the main line of railway, about sixteen miles to the north-east. The coals here opened on, occupy positions considerably higher stratigraphically in the Kootanie series of the Cretaceous. A trial heading has here been run into a seam 13 feet thick, which is believed to represent the Peter seam,

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openings upon the outcrop of which were made some years ago near Marten Creek, on the line of the old trail. This heading is about five miles west of the summit of the pass, or practically at the junction of the East Fork of Michel Creek with the main valley. Prospecting operations are also in progress in adjacent parts of the Michel valley on other beds of the fine series of coal-seams that characterized the Crow Nest basin. The great value of this remarkable field is, in fact, now in a fair way to be realized, and from this time onward continuous shipments of excellent coke will no doubt be made from it to the smelters and metalliferous mines of West and East Kootenay.

Shipments of coke.

The geological structure of the Rocky Mountain ranges proper, or that part of the western mountain region that lies between the eastern foot-hills and the great Columbia-Kootenay valley on the west, assumes a great practical importance in view of the opening up and working of the coal-beds included within its area. On the map accompanying my Preliminary Report on that portion of the Rocky Mountains between Latitudes 49° and 51° 30', forming part of Volume I. (1885) of the new series of Annual Reports of the Geological Survey, the areas of the Cretaceous coal-bearing rocks are represented with approximate accuracy and in so far as the work carried out up to that date allowed. Several sectional diagrams were also given; but at the time the explorations to which this report relates were made, the existence of extensive "overthrust faults" as a factor in mountain structure had scarcely been recognized by geologists. At a later date, the importance of such faults was very strikingly demonstrated, particularly in connection with the geology of Scotland, and it was realized that by tangential pressure, acting on the earth's crust, older beds may be bodily thrust forward upon newer formations for distances measured in miles.

Geological structure of coal-fields.

Overthrust faults.

The position of the Cretaceous coal-bearing rocks at and within the eastern edge of the mountains on the Bow and Elbow rivers, appeared to indicate the existence of an overthrust of the kind, but it was not until Mr. R. G. McConnell made his detailed examination of the Bow Pass, in 1886, that it was actually possible to state that the Palæozoic rocks had, in that vicinity, along the eastern point of the mountains, been thrust forward over the Cretaceous beds and up a gently inclined fault-plane for a distance of about seven miles, by pressure acting from the westward. This feature, as demonstrated in the vicinity of the Bow, is clearly shown in the sections accompanying the report cited.\*

First determined on Bow River.

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\* Annual Report, Geol. Surv. Can., vol. II. (N.S.), Part D.

Bearing on  
structure of  
Rocky  
Mountains.

It had heretofore been supposed that a great normal fault, with downthrow to the eastward, defined the eastern base of the Rocky Mountains in this vicinity and separated the rocks of the mountain region from the wholly Cretaceous and Laramie rocks of the foot-hills; but the structural discovery above alluded to, at once threw doubt on the earlier supposition, as well as upon several of the sketch-sections drawn in conformity with it in other parts of the mountains.

Application  
to Crow  
Nest field.

In the map above referred to, the approximate western boundary of the Crow Nest coal-basin is shown to closely follow the Elk River. Later, but as yet very incomplete observations, seem to indicate that a not inconsiderable width of the Cretaceous rocks may, in some places, occur to the west of that river, between it and the high mountain range which is evidently composed of Palæozoic limestones. It further appears to be, at least quite possible that the coal-bearing rocks may be found to pass beneath these older rocks by overthrust of the latter, and that another development of the coal-seams already known east of the Elk may be discovered there. It is obvious that if the coal-bearing formation could thus be shown to underlie the limestone range to the west of the Elk to any considerable extent, and to contain unbroken coal-seams of a workable character there, the area of this already very important coal-basin might prove to be, for practical purposes, materially greater than has been supposed.

Other possible  
lines of over-  
thrust.

Further east on the Crow Nest Pass, is another similar line of possible overlap of the older rocks upon the newer coal-bearing Cretaceous, where these meet near the east end of the Crow Nest Lake. It is not, however, so likely that conditions of this kind occur where rocks of the same series come together at the eastern entrance to the pass, along the base of the Livingstone Range, as both the older and newer rocks here stand at very high angles, not suggestive of any extensive overthrust.

Practical bear-  
ings.

The questions thus stated, arising from the scientific study of the section met with on the Bow Pass, have obvious practical bearings in regard to the coal lands, and seem to call for examination and decision, by means of surveys more exact than have hitherto been feasible.

May explain  
occurrence of  
petroleum.

It further appears to be quite possible that overthrusts of the kind referred to may serve to explain the otherwise somewhat anomalous occurrence of petroleum in the southern part of the Rocky Mountains, between the Crow Nest and South Kootenay passes. The actual existence of small quantities of petroleum in several places in this portion of the mountains was verified, some years ago, by the personal



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observations of Dr. Selwyn.\* The petroleum was actually found in parts of the mountain region characterized at the surface by very ancient rocks, probably of Lower Cambrian age. If it may be assumed, however, that these rocks possibly overlie, in some places, those of the Cretaceous series, by reason of overthrusts, it is easily conceivable that the petroleum in question may have originated in consequence of heat, at considerable depths in the earth's crust, acting upon the fixed hydrocarbons contained in the rocks of that series.

Now that the completion of the Crow Nest Pass Railway has rendered it possible to transport boring appliances to the Flathead Valley without great difficulty, it is likely that test wells will soon be sunk there. The indications certainly seem to be sufficiently promising to warrant some outlay in work of the kind, notwithstanding the generally disturbed and broken character of the formations of the region.

Test borings  
suggested.

### SYNOPSIS OF FIELD WORK.

In laying out the field-work for the past year, it was evident that special attention should be given to the Yukon District, and Mr. McConnell and Mr. Tyrrell were both consequently assigned to different parts of this district. Their reports are given on a later page. The number and distribution of parties in the field, engaged in work that occupied the greater part of the season, is given below :—

Distribution  
of field-parties

British Columbia.....	1
Yukon District.....	2
Alberta (boring operations and collecting).....	2
Ontario.....	4
Quebec.....	1
New Brunswick.....	2
Nova Scotia.....	3
Ungava (East coast of Hudson Bay).....	1
	16

Dr. H. M. Ami and Mr. L. M. Lambe, both occupied in palæontological work, are here counted with the field parties.

Shorter periods were spent in field-work by Mr. J. White, who ran transit and chain lines from Ottawa to Sharbot Lake, and from Carleton Junction to Chalk River, thus completing a base-line, for geographical purposes, between Ottawa and Georgian Bay. Mr. Willimott

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\* Summary Report, 1891, p. 10 A.

also visited a number of localities in Quebec and Ontario for the purpose of obtaining specimens for collections and for the museum, and Professor J. A. Dresser of Richmond, Quebec, was afforded facilities for the prosecution of a petrographical examination of Shefford Mountain in the "Eastern Townships" of that province, from which it is anticipated that interesting results will follow.

Review of explorations in 1898.

The main features of the field-work accomplished during the year, may be epitomized briefly as follows, further details being contained in the reports handed in by the officers engaged in it and printed on later pages of this Summary. The reports are taken up, as usual, in order from west to east.

Yukon District west of Lewes River.

To Mr. J. B. Tyrrell was assigned the preliminary examination of a portion of the Yukon district, to the west of the line of the Lewes River and south of Fort Selkirk. Considerable difficulty was experienced in this work, on account of the failure of the horses depended upon for transport, but about 300 miles of new surveys were made and geological and other facts noted respecting the vicinity of the Dalton trail which had previously been mapped by Mr. McArthur of the Dominion Lands Survey. Mr. Tyrrell also joins with Mr. McConnell in a short report, giving the result of their united observations on the actual mode of occurrence and methods of working the gold placers of the Klondike region.

East of Lewes River.

To Mr. R. G. McConnell was entrusted the task of making a geological reconnaissance and exploration of part of the Yukon district to the east of the Lewes and south of the latitude of Fort Selkirk, together with the line of route from Teslin Lake to the Stikine River, in the northern part of British Columbia. He was also requested to make, if possible, a preliminary study of the mode of occurrence of gold in the Klondike region itself, where such important mining operations are already in progress. In the course of these operations the Big Salmon and Nisutlin rivers were ascended to their sources, and surveyed wherever necessary, and Teslin River and the borders of Teslin Lake were examined. The results indicate the existence of several new tracts of country which appear to warrant close examination on the part of prospectors, besides affording approximate outlines for the geological formations over a large region in which these had previously remained unknown.

Edmonton to Yellow Head Pass.

A general reconnaissance survey has been made by Mr. J. McEvoy, from Edmonton westward to the upper waters of the Fraser and Canoe rivers, with special reference to that part of the Rocky Mountains in this vicinity. Practically all the geological information heretofore

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available for this region was that gained by Sir James Hector, many years ago, under the unfavourable circumstances of rapid winter travel. The knowledge since obtained of the general structure of the mountains, both to the south and north, renders it comparatively easy to understand that of the intermediate district, and the facts observed by Mr. McEvoy will enable what has been a considerable gap in all previous maps, to be filled with approximate accuracy. Notes were also obtained respecting prospecting and mining operations in the district, the character of the various routes, forests, agricultural value of the lands, etc. A notable point is the approximate determination of the height of Robson Peak, which, as stated on a subsequent page, appears to be the highest summit in the Canadian Rocky Mountains.

In West Kootenay, the mapping work referred to in previous reports was continued and extended by Mr. R. W. Brock and Mr. W. W. Leach. The laying down of the topographical features of this exceptionally rugged mountainous district, is here a necessary adjunct to the geological mapping, and the smoke from forest fires seriously impeded this work by interfering with the utility of the various transit stations. Substantial progress was, however, made in the work. The area to which particular attention was given, being between Slocan and Lower Arrow lakes, is almost entirely mountainous, culminating in the ragged crests of the Valhalla Range. The rocks met with are chiefly granites, referable to several periods; and in regard to their relations and those of the contained areas of altered sedimentary rocks and later dykes, some valuable information, bearing directly upon the mode of occurrence of the ore-deposits of the district, was obtained. Further evidence was also noted, at heights between 7000 and 8000 feet of the passage of the great Cordilleran glacier over the entire district in a south-easterly direction.

Surveys of the gold-bearing region of Western Ontario were continued by Mr. W. McInnes, and directed to the completion of a new map-sheet to the north of that known as the Seine River sheet, and east of the Manitou sheet, now in course of compilation. These surveys necessarily involve the mapping of the lakes and rivers of the region to be covered, and although good progress has been made in the work, it will be necessary to devote another season to the area in question before it can be definitely laid down and completed for publication. It has already been pointed out on several occasions, that the work of the trained geologists of this Survey would be carried on to much greater advantage and with less delay, if the geographical outlines were in advance laid down by the provincial authorities. This is especially to be desired where, as in the region here parti-

West Kootenay.

Western Ontario.

Assistance in surveys required.

cularly referred to, prospectors and miners are urgently requiring geological maps for their guidance.

Lake Nipigon. In order to complete the work necessary for the compilation of a general geological map of Lake Nipigon, north of Lake Superior, Mr. D. B. Dowling was engaged in surveys on that lake and in its vicinity. The outlines of the Nipigon and Huronian rocks were defined and the numerous large islands were laid down, some of them for the first time.

Michipicoten. In the Michipicoten region, about the north-east coast of Lake Superior, Dr. R. Bell was employed, during several months, in ascertaining the boundaries and character of the Huronian rocks and other features of the geology, the recent discovery of gold in the district having rendered this particularly desirable. The distribution of the Huronian—here as elsewhere the gold-bearing series—had previously been but imperfectly determined, and the additional information now gained should be of importance in guiding the future work of prospectors and miners.

Central Ontario.

In Central Ontario, detailed geological work has been continued on the Haliburton map-sheet by Mr. A. E. Barlow and Dr. F. D. Adams, with a view to making this a typical sheet for the entire region, and also for the purpose of determining, as far as possible, important questions bearing on the relations and mode of mapping the Grenville, Hastings and Huronian formations. This investigation is now well advanced, but definite statements respecting its results are deferred pending its completion. The occurrence of certain remarkable conglomerates met with, has been found to depend on the internal movements of masses composing them, and some of the highly crystalline limestones, have been traced continuously into beds of limestone but little altered. Several additional areas of nepheline-syenite have also been discovered, and these obtain some economic importance because of the association of corundum and muscovite mica with them.

Three Rivers map-sheet.

A part of the season of field-work was employed by Dr. R. W. Ells, in obtaining some additional details that proved to be required for the Perth and Ottawa City map-sheets of the Ontario series, and in visiting some localities within these sheets where minerals of economic value had been reported. The greater portion of his time was, however, given to further examinations in the area of the Three Rivers map-sheet in Quebec, now in the hands of the engraver. The general character of the crystalline rocks of this region, has already been described, but the work now done, in conjunction with that previously accomplished by other members of the staff, has enabled Dr. Ells to prepare a short descriptive report for publication with the map-sheet.

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Mr. A. P. Low was entrusted with the task of continuing and completing the exploration and survey of the eastern coast of the northern part of Hudson Bay, together with that of the northern islands in the Bay. It appeared to be necessary for the proper prosecution of this work that the available seasons of both 1898 and 1899 should be employed in it, arrangements being made to pass the present winter on the shore of Hudson Bay. The small yacht employed by Mr. Low in Hudson Strait in 1897, had been stored at Nachvak on the Labrador coast. He therefore left Quebec in the Hudson's Bay Company's schooner for Rigolet, on the Labrador coast, on June 30th. At Rigolet he was picked up by the steamer *Erik* belonging to the same company, on her arrival from England, and taking the yacht on board at Nachvak, he proceeded through Hudson Strait, leaving the steamer in a bay east of Cape Wostenholme. A letter written at that time, under date 30th July, is the latest information received in regard to this expedition. Early in the season an ample supply of provisions for the winter was despatched via Missinaibi and Moose River, in charge of the Hudson's Bay Company for transportation to their post at the mouth of Great Whale River, where Mr. Low intended to winter. From this place it is also intended that he should carry out such exploratory trips inland as may be found possible, during the winter and spring. A short report has since been received from Mr. Low which will be found on a later page.

The mapping of the surface geology of New Brunswick, was resumed last summer by Mr. Chalmers, in portions of York, Sunbury and Carleton counties, and in connection with this several interesting facts relating to the St. John River and valley were noted. Professor Bailey was also employed in New Brunswick in obtaining further notes on economic minerals and in investigating the age of the great slaty band of the interior of the province. Some new facts relating to the coal measures of New Brunswick, which have come under his observation, will be made the subject of a future report.

In Nova Scotia, Mr. Fletcher has been engaged during the season chiefly in the vicinity of the Springhill coal-field. The principal result of this work, and one having great economic importance, is the tracing out of the coal seams upon which mining is now in progress, for a distance of more than two miles further than these were previously known to extend. Mr. Faribault also continued his work in this province, the greater part of his time being devoted to the gold-bearing districts east of Halifax, upon which he has a special report now in course of preparation. On a later page of this Report

preliminary details are given bearing on the Waverly, Montague, Lawrencetown, Lake Catcha, Tangier and Cow Bay gold districts.

#### EXPERIMENTAL BORINGS IN NORTHERN ALBERTA.

Boring operations in Alberta.

The second and third of the experimental borings in search of petroleum in the northern part of Alberta, were begun early in the summer of 1897 near the mouth of Pelican River, on the Athabasca, and at Victoria, on the Saskatchewan, below Edmonton, respectively. The sites selected for these borings were determined largely by the knowledge of the stratigraphical succession and thickness already gained in the first bore-hole at Athabasca Landing. The borings at Pelican and Victoria had reached depths of 820 and 705 feet respectively before winter. Operations were resumed at both places in the spring of 1898, as soon as the requisite arrangements could be made.

It will be remembered that work had to be suspended at Pelican in 1897, because of a very heavy flow of natural gas, under great pressure. It was hoped that most of this gas might blow off during the winter, and it was in fact found to be considerably reduced in amount when the locality was again reached by Mr. Fraser in 1898. Work was resumed, but additional and very strong flows of gas were soon met with in the underlying beds, and after exhausting every method of mastering these and continuing the boring, it became necessary again to suspend operations.

Difficulties met with at Pelican.

Some particulars of the attempts here made are given below in Mr. Fraser's report, from which it appears that the practically insuperable obstacle met with, was the clotting of the casing and tools with the heavy tarry petroleum, or maltha, mixed with sand, which was thrown up by the discharge of gas. It had been hoped that, at a greater depth, and particularly in the Devonian limestones from which the oil has been originally derived, it might be found in a more fluid state, but it has proved to be impossible to penetrate the "tar-sands" at the base of the Cretaceous at this place, and it appears probable that this could only be accomplished by beginning at the surface with a hole of much larger diameter.

Progress at Victoria.

Meanwhile, the boring operations at Victoria were steadily continued, without notable incident, but progressing slowly in depth on account of the exceptionally difficult character of the crumbling clay-shales to be penetrated. When the circumstances rendered it advisable to close the work here for the season, the depth obtained was 1650 feet. The hole is cased to this depth with 4½-inch casing, and is in good condition for the resumption of work in the spring, when it

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will be necessary to introduce 3½-inch casing, a sufficient quantity of which has been delivered at Edmonton.

At 1600 feet, the temperature in the bore-hole was found to be 76° F., as determined by special maximum thermometer manufactured by Casella. Temperature in boring.

It is believed that it will be necessary to carry this boring down to a depth of about 2000 feet, in order to make a fully satisfactory test of the rocks to the base of the Cretaceous in this place. The work so far has been confined to penetrating the great mass of overlying shaly rocks of this formation that it was known would be found here, and in which no developments of economic importance were anticipated.

At the request of several gentlemen in Edmonton, I visited Big Egg Lake, about twenty-five miles north-west of Edmonton, on August 22nd, in company with Mr. W. A. Fraser and Mr. E. Lyons, for the purpose of examining the indications of petroleum which had been found there. The place had already been examined by Mr. J. B. Tyrrell and by Dr. A. R. C. Selwyn, in 1893 and 1894 respectively, but it seemed possible that the facts since ascertained by means of the experimental borings might throw some further light on the conditions at Egg Lake. Tarry or pitchy matter is stated to have been here first found in ploughing on the north-west quarter of section 30, township 56, range XXV., west of the 4th meridian. Several small excavations were then made, and veins or layers of hardened pitch and pitch-saturated sand were found. The pits had, however, become filled before the time of my visit, and nothing could be seen but lumps of pitchy material which had been thrown up in digging them. Visit made to Big Egg Lake.

When Mr. Tyrrell visited the place the pits were still open, and as his report on observations then made was not published, the following may be quoted from it:— Previous observations by Mr. Tyrrell

“On an almost level plain, declining very gently towards Egg Lake, several pits had been dug from three to four feet deep and in all 200 yards apart in a north-and-south line. On the side of the most northern pit, a narrow vertical vein of rather hard pitch, in places about an inch wide, could be seen running through the clay. Another pit, fifty feet south of the last, had been dug to a depth of nine feet six inches, but at the time had six feet of water in it. A large amount of sand saturated with tar was lying beside this pit. We baled the water out of this pit, when the unstratified material with pebbles was found to extend down to a depth of eight feet, and through it were running many veins of hardened pitch. Below this, a coarse, moderately even-grained and apparently horizontally bedded sand is reached. This sand is saturated with tar.”

Search for oil. Subsequent to the date of Mr. Tyrrell's note, a boring to a depth of 120 feet was made, about 150 yards to the north-eastward of the pit last described, by Mr. W. Pearce, who states that after passing through eight feet of soil and clay he found eight inches of tarry sand; after which he appears to have penetrated boulder-clay to a depth of forty feet, then layers of sand and gravel with water and below this soft sandstones of the Laramie formation.

Indications of a line of fault. About three-quarters of a mile distant from the field in which the pits were sunk, on the south-west quarter of section 31, in the same township, is a rather remarkable spring and mire-hole. The outflow is not copious, but is accompanied by the emission of sulphureted hydrogen. Another spring of the same kind, and slightly saline, occurs about half-way between the first and the place where the tarry matter was found, and all three localities lie in a nearly due north-and-south line. The circumstances are in fact such as to favour the belief that the underlying strata have here been cut through by a small fault, by means of which the waters of these springs, and at an earlier date, the tarry matter, have forced their way to the surface.

Deductions from observations. If this supposition be correct, it would follow that the petroleum from the deeper beds of the Cretaceous must have been in a sufficiently fluid state to rise through a fissure of the kind and locally saturate beds of sand traversed by it, as well as to fill narrow veins in the boulder-clay, subsequent to the glacial period; and it would appear probable that, in this part of the region at least, it may still remain in a similar condition. It does not follow, however, that this would be a specially favourable locality in which to test the lower beds of the Cretaceous by boring, for, on the contrary, our knowledge of the geological structure of this part of the country indicates that the depth at which these beds lie is here very great, probably at least 2500 feet and possibly much more.

Objects and progress of boring operations. The experimental boring operations were initiated with the object of seeking for petroleum in quantities of commercial importance, at localities not too far removed from settlements and means of communication. The indications of the existence of petroleum, in the form of enormous deposits of "tar-sands" appearing along the natural outcrop of the lowest Cretaceous beds of the region, on the Athabasca, fully warranted the experiments entered on. The actual boring operations, have, in consequence of many unforeseen difficulties met with and the time lost in consequence of the remoteness of the work, been attended by regrettable delays, and have so far failed to demonstrate the existence of petroleum of economic value in respect to quality and quantity. They have, however, as pointed out in previous reports,



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demonstrated the regularity and the great extent of the probably oil-bearing beds, and have indicated the occurrence of natural gas in important amount over a large tract of the North-west.

In regard to the actual existence of petroleum, the results have not up to the present stage been so satisfactory. The boring first begun, at Athabasca Landing, was unavoidably abandoned at a depth of 1770 feet, without reaching the probably oil-bearing beds at the base of the Cretaceous formation, but within a short distance of attaining these beds. The boring near the mouth of the Pelican River, penetrated the lower sandy beds of the Cretaceous for some distance and demonstrated the existence in these beds of a thick tarry petroleum or maltha, besides that of great reservoirs of natural gas. It has proved impossible to carry this boring to the very base of the Cretaceous and into the underlying formation, in which the existence of a more fluid and merchantable oil was still to be hoped for. The appearance of maltha at a distance of some sixty miles behind the natural outcrop of the "tar-sands" and where these basal beds of the Cretaceous are so well under cover, at a depth of 800 feet, is, it must be confessed, somewhat disappointing. It may possibly be that all the petroleum, derived from the underlying Devonian rocks, has, after saturating the porous beds at the base of the Cretaceous, passed into this tarry condition; but this is by no means probable, and the facts already described as seen at Egg Lake, appear to show that at a very late period, geologically considered, petroleum in a liquid form has existed, locally at least, in the underlying rocks.

Taking the proved existence of tarry petroleum at the Pelican and the indications at Egg Lake together, we appear to have a demonstration of the occurrence of such hydrocarbons for a distance of over 150 miles from, and nearly at right angles to the direction of the natural outcrops of the "tar-sands" on the lower Athabasca. The locality at which the first experiment was attempted, Athabasca Landing, lies nearly in a line with these occurrences and not far from midway between the Pelican and Egg Lake, with the advantage over the latter of a much less depth of strata to be penetrated in order to pass through the whole thickness of the Cretaceous. The boring now in progress at Victoria, lies about fifty miles to the east of the line above referred to. This boring is in good condition for prosecution to the required depth next summer, and it is believed that it should be continued and completed. It is also believed that, in further prosecuting the work, a new boring should be undertaken at Athabasca Landing, beginning with a diameter somewhat greater than the last. With the experience now gained of the character of the shales to be penetrated,

Petroleum of commercial value not yet discovered.

Great area which may yield petroleum.

Future operations.

it should not be difficult to carry the boring to the required depth without much loss of time.

Should the borings at Victoria and at Athabasca Landing find only maltha in the lower porous beds of the Cretaceous, and should the underlying Devonian rocks, to a moderate further depth not yield a liquid oil, it would be necessary to admit that the probabilities of developing petroleum of commercial importance in this part of Alberta are small. So far, however, the only discouraging feature met with is the appearance of tarry oil at the Pelican, while the proved continuity over a great area of the oil-bearing conditions, is most important, and the outlook generally is such as to be well worth any further effort that may be necessary to fully test the matter.

Report by  
W. A. Fraser.

The following account of the actual progress of the boring work is from Mr. Fraser's report on the same.—

“Both the bores commenced during the season of 1897 had been left uncompleted at the end of that season. The bore at Victoria had been carried down to a depth of 705 feet, and was discontinued in the autumn at that depth, being still in the dark shales which overlie the other strata, and which have a thickness of a thousand feet or more.

*Boring near Pelican River, Athabasca River.*

Pelican boring  
stopped by  
gas.

“The bore at Pelican River had been stopped at 820 feet owing to the striking of an immense flow of gas, which made it impossible to work while it continued to flow with such force. It was thought that by the spring of 1898 it would have exhausted itself sufficiently to permit further boring, and to this end the casing, 4½-inches in diameter, was left quite free and open to permit the escape of the gas. It was estimated that before a depth of 1000 feet was encountered the Devonian limestone would be pierced.

Resumption  
of work.

“Upon investigation in the early part of the present season, the flow of gas seemed to have very materially decreased; but upon operations being resumed, the seeming decrease was found to be in a great measure due to the closing up of the outlet at the bottom part of the casing by an asphalt-like mixture, composed of maltha, or petroleum tar, and sand. In fact, when boring operations were resumed on June 17th, the difficulty was found to be intensified by the accumulation of this asphalt-like maltha in the bottom of the bore.

Difficulties  
met with.

“The rapid expansion of the gas produced a very low temperature, and this chilled and solidified the tar, or maltha, until it became as

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adhesive as wax. As the tools cut it loose the gas would carry it up through the bore, until from bottom to top, it was almost one mass of sand and tar. The only way it could be extracted from the sand-pump was by heating the latter over a fire; even then very little could be got out at one time, it being so thick that it was almost impossible to force it up into the pump. I used different sorts of tools to cut it off the walls and clean it out, but the longer we worked at the bore the greater the quantity of tar accumulating on the sides of the casing and tools.

“ We then pulled the  $4\frac{5}{8}$ -inch casing out, thinking we might be able to ream down past the flow of gas, and thus shut it off, but the gas, which had increased in power with the cleaning of the hole, cut the walls down and blew great clouds of sand and gravel higher than the derrick. The men were forced to put the  $4\frac{5}{8}$ -inch casing back in the hole without being able to ream past the strata from which the gas came. Great force of gas.

“ While this was being done, I proceeded to Athabasca Landing, and sent down to the works by boat 1050 feet of  $3\frac{5}{8}$ -inch casing. I then continued on to Edmonton to get a patent 4-inch drill bit which I had ordered by telegraph from Petrolia.

“ After putting back the  $4\frac{5}{8}$ -inch casing, the driller succeeded in getting the bore down seven feet below the formation from which the gas came. This filled in with maltha, and when they put down the  $3\frac{5}{8}$ -inch casing to the bottom, it being wedged tightly in this maltha, shut off the flow of gas from the inside of this casing. The gas was then escaping between the  $3\frac{5}{8}$  and  $4\frac{5}{8}$  inch casing. Further depth obtained.

“ Owing to the shutting off of the gas, it became possible to get water down inside the  $3\frac{5}{8}$ -inch casing, and the men drilled ten feet very fast, through a soft sandstone. At this depth, 830 feet, another small flow of gas was encountered, but by using a casing-head, and a short piece of 1-inch pipe, they still managed to get water down inside the  $3\frac{5}{8}$  inch casing to drill with. In this manner another seven feet was drilled, when a strong flow of gas and maltha was struck in a conglomerate formation. This flow of gas, at 837 feet, was nearly as strong in volume as that met with at 820 feet.

“ The  $3\frac{5}{8}$ -inch casing could be carried no deeper, owing to the strength of the gas and the impossibility of getting water down, and as a smaller size of casing could not be used, nothing remained but to wire to Ottawa the condition of affairs, and wait for instructions. Upon receipt of your instructions to suspend operations, I did so at once, and returned the men to Petrolia. Drilling stopped by outburst of gas.

Character of  
the gas.

“I proved the general excellence and utility of the gas during the season, using it for my boiler, cook-stove and for lighting. I had only a 1-inch pipe, tapped into the side of the casing, and probably did not use the one-hundredth part of the gas coming from the bore, but there was sufficient to make all the steam necessary on my twenty-five horse-power boiler, keep fire in the stove, and also to supply a strong flare-light. The gas burned beautifully clean.

Its force.

“In working at the bore, the screeching and hissing of the gas, when at all confined by the presence of the tools inside the casing, or from other causes, was so great that the men complained of pains in their ears and heads.

“All that could be done was done to get the bore down the couple of hundred feet necessary to make a complete test in this place, and though failure was the result, it has, perhaps, shown how a bore may be carried down so as to get through these extraordinary gas veins. To ensure success, a new bore at the depth of 820 feet, where the first large gas-vein was encountered, should be at least ten inches in diameter; then it would be possible to reduce the casing four or five times, giving that many different lines of pipe to be used in getting by these gas-veins.

Extent of gas-  
field proved.

“The bore also furnishes additional evidence of the existence in the North-west Territories of a vast gas-field. The seemingly uniform continuity of the Cretaceous beds, makes it almost certain that gas-wells may be obtained by boring, over a great area, as pointed out in the Summary Report of the Geological Survey for last year, (pp. 18-19). Unfortunately the Pelican bore, like the boring at Athabasca Landing, did not penetrate deep enough to furnish reliable information as to the existence, or non-existence, of petroleum of a high quality. The presence of the low quality petroleum—maltha—is demonstrated, but as the more liquid oil may very probably underlie this, and as we did not reach a sufficient depth to determine the point, the result is unsatisfactory.

Section.

“The formation, from 820 to 837 feet, is a continuation of the “tar-sands” as under:—

820-830 feet. Soft sandstone.

830 “ Hard streak and light flow of gas.

830-836 “ Soft sandstone.

837 “ (Conglomerate) — Iron-pyrites nodules embedded in cement-like sandstone. Very strong flow of gas.

“Upon closing down the work, the rig, derrick, and all machinery were left standing in place, and the casing was left in the bore-hole.

## Geological Survey Department.

### *Boring at Victoria.*

"It was decided, in the latter part of the winter, to take to Edmonton only the gang of men intended for Victoria, leaving the bringing up of a gang for the Pelican boring until such time as the said boring might be inspected and the utility of further operations decided upon. So, early in May, I proceeded to Edmonton with a drilling gang for the boring at Victoria. We reached Edmonton on May 7th, and proceeded to commence work at Victoria at once.

"The 6½-inch casing had been put down previously to a depth of 700 feet. It was impossible to drive it beyond that depth owing to the great pressure of the caving shale, consequently the 5½-inch casing was inserted, and the bore continued of this diameter. Drilling was slow, owing to the continuous caving of these soft, dark shales, which correspond to the La Biche shales of the Athabasca bore.

"The 5½-inch casing was carried down to a depth of 1012 feet, when it became fast owing to the great pressure. Then the 4½-inch casing was inserted and carried down to the present depth of the bore, 1650 feet.

"It was thought, judging from the progress this latter size was making, that it would be possible to continue it to probably 2000 feet, but at the above depth it rather suddenly ceased going, and I am of opinion that one of the small, hard, concretionary nodules, that we encountered from time to time, dropped in beside it, and wedged it over against the wall.

"The pressure of the caved walls was so great on the casing that it was impossible to pull it up, otherwise we might have succeeded in clearing it. A patent under-reaming bit was used during the whole of the boring from 705 feet to 1650 feet, and gave good results.

"The continual caving of the shales made the drilling very slow, it being impossible at any time to drill more than ten or fifteen feet ahead of the casing. Saline water was encountered and also small flows of gas. At the present depth, there is a fairly strong gas-vein.

"Very little of unusual interest occurred during the season's work at Victoria. The driller I had, Mr. Wm. Slack, of Petrolia, proved a most careful, faithful and efficient man. This relieved me of a great deal of responsibility, and enabled me to devote more time to the operations at Pelican River.

"During the summer, it was decided that it would be advisable to have on hand at least 2400 feet of 3½-inch casing, to carry on the boring in case the 4½-inch should cease going. This was ordered, and

is now at Edmonton, ready to be sent down to Victoria for use in the bore during next season's operations. The 3½-inch drill tools which were at the Pelican River boring were also brought up, and are now at Edmonton."

Strata bored through.

Subjoined is a record of strata bored through at Victoria :—

705-	960 feet.	Soft dark shale.
960-	970 "	" " " with layers of sand and a little gas.
970-	1000 "	" " "
1000-	20 "	" " " streaks of sandstone.
102 -	30 "	Dark shale. Gas.
1030-	90 "	" " Increased gas.
1090-	1230 "	Soft black shale.
1230-	50 "	" " " streaks of sandstone.
1250-	1320 "	" " " caving badly.
1320-	40 "	Brown shale, with sandstone layers
1340-	90 "	Sort dark shale.
1390-	1410 "	Bluish shale. Thin streaks of sandstone.
1410-	28 "	Black shale.
1428-	30 "	Hard sandstone.
1430-	60 "	Black shale.
1460-	1500 "	Bluish shale.
1500-	65 "	" " Streaks of sandstone with gas
1565-	75 "	Hard sandstone.
1575-	85 "	Dark shale mixed with sandstone.
1585-	1600 "	Hard sandstone.
1600-	45 "	Shale and sandstone strata mixed.
1645-	50 "	Hard sandstone.

#### YUKON DISTRICT.

(*With adjacent parts of British Columbia.*)

Work by Mr. J. B. Tyrrell. During the winter of 1897-98, Mr. J. B. Tyrrell was at first engaged in labelling and arranging the specimens collected during the preceding summer. Afterwards his time was devoted to examining and correlating the large series of Archæan rocks collected on Lake Winnipeg and in its vicinity during the summers of 1890, 1891 and 1895; to collecting the material for a final report on the Lake Winnipeg district, and to writing part of the report.

In the spring, he was instructed to undertake a reconnaissance survey of the south-western portion of the Yukon District, and with regard to this work he reports as follows :—

## Geological Survey Department.

“ On the 9th of May I received from you instructions for the season's work in the field, of which the material part was as follows :—

“ ‘ The principal object of your exploration will be to obtain as much geological and general information as possible respecting that part of the Yukon district between the line of the Lewes River and the 141st meridian, and to the south of the latitude of Fort Selkirk. The so-called Dalton trail will probably prove to be your most convenient base of operations, more particularly as it has already been mapped with some accuracy by Mr. McArthur of the Dominion Lands Survey. <sup>His instructions.</sup>

“ ‘ Should good geological sections be met with, it may be well to devote some time to their particular examination, but, generally speaking, the work will require to be of a reconnaissance character, with the main purpose of ascertaining in what parts of the region the formations and conditions are such as to encourage search for payable gold deposits, ores and coal. Information of this nature will undoubtedly possess great value in directing the operations of prospectors in the season of 1899, by which time entrance to the entire Yukon District will probably have become comparatively easy.

“ ‘ The glacial and other superficial deposits will not escape your attention as these are likely to have intimate relations to the occurrence of placer gold.

“ ‘ If found to be convenient, at some time during the season it might be advisable to pay a brief visit to the Klondike region, for the purpose of comparing conditions there with those in the region more particularly under examination ; but it would be unwise to allow this to materially interrupt the main work, in view of the shortness of the season, the necessary cost of the outfit for the expedition, and the probability that the horses, etc., may not be available for further operations in a following year. The same circumstances will render it proper to continue work in the autumn as late as the conditions remain reasonably favourable.’

“ Mr. J. J. McArthur, D.L.S., of the Topographical Branch of the Department of the Interior, had travelled over part of the Dalton trail last year, and was going over it again this year on his way to Stewart River. He kindly offered to purchase horses for me and to take them to Pyramid Harbour with his own ; as he was acquainted with the district, and where feed, if any, could be obtained, this was a favour which would assist me very materially at the beginning of the exploration. <sup>Assistance from Mr. McArthur.</sup>

“ Mr. J. F. Shaw, of Ottawa, was employed to look after the horses, and on the 26th of April I sent him west to join Mr. McArthur in Van- <sup>Preparations for work.</sup>

couver, with instructions to render any assistance in his power in the purchase and care of the horses. On the 12th of May I left Ottawa and proceeded to Kamloops, where I obtained some saddles and blankets belonging to the Survey that had been stored there some years before.

"Thence I went to Vernon, and there employed two men, Cameron and Redmond, the former as packer, and the latter as cook. With these men I went to Vancouver, where I found that Mr. McArthur had gone on with the horses on the steamer *Islander* a few days before. After obtaining the supplies necessary for the summer, we followed in the steamer *City of Seattle*, and on 28th May arrived at Mr. McArthur's camp on the bank of the Chilkat River, not far from Haines Mission. As yet the grass had scarcely begun to grow, and the country afforded very little feed for the horses, so that it was necessary to supply them with feed brought from the south. Dalton's new trail was not yet cut out on the west side of the river, and the flats by the river were so wet that they were scarcely passable.

Assistance  
from Mounted  
Police.

"Mr. McArthur obligingly agreed to continue in charge of both parties until the 12th of June, during which time he was able to move about twenty-five miles up the Chilkat River to the crossing of Salmon River. From here he was obliged to return to Dyea, while I pushed on to the camp of the North-west Mounted Police at Pleasant Camp, and then over the summit to Rainy Hollow, being the first to reach there with horses this summer. At the Mounted Police station, Inspector Jarvis kindly had all our horses shod, for many of them had dropped their shoes among the stones in the beds of the streams that had been followed or crossed. Our party, on leaving Pleasant Camp, consisted of myself, three men, and fourteen horses. On account of the scarcity of food the horses had failed in flesh very considerably.

"The Summit."

"The hill just west of Pleasant Camp, forming the high land known as "The Summit," is a spur of gray hornblende-granite projecting out into the valley. It is 1700 feet in height and rises with a slope of 22° from a small grassy plain surrounded by dense coniferous forest, to a barren alpine plateau, entirely devoid of trees. The luxuriant flora of the Pacific Slope extends up the Klæhini Valley to this hill, and to some extent around it, and up the valley to Rainy Hollow, but beyond that point the flora of the drier interior plateau takes its place.

Dalton post.

"We continued on to Dalton post, on the Tatshenshini River, where we arrived on June 24th. The Indians of the surrounding country were collected in the adjacent village of Wesketahin to await the arrival of the salmon up the stream.



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“On the way, I had made as careful an examination as possible of <sup>Rocks.</sup> the general geology of the region, but since the sides of the wide valley were covered with glacial detritus up to height of from two to three thousand feet, it often required the expenditure of a great amount of time to see the underlying rock at all. As a general rule, however, the valley was found to run between a range of granite mountains to the north-east, and a range of mountains of schist, quartzite, etc., to the south-west.

“The main branch of the valley, which we had been following, <sup>Continuation of Dalton trail.</sup> continues on towards the north-west from Dalton post, but we turned northward up the valley of Unahini River, and followed the banks of this stream, or climbed along the slopes of the mountains, to Klukshu Lake. Here a trail turns westward towards Shorty, Roberts and Alder creeks, but the Dalton trail, which we were following, continued northward, up the east side of the lake, and then across the wide Shakwak Valley, through which Messrs. Glave and Dalton first reached this country in 1890. Lake Dezasdash lies in the angle where the two valleys cross, and from it flows one of the longest branches of the Alsek, at first northward, then westward and afterwards southward to the Pacific. After leaving Lake Dezasdash it flows through a deep and comparatively narrow valley, between Mount Kelvin, a magnificent granite mass that rises to a height of 5000 feet above the river on the east, and Mount Bratnober, about a thousand feet lower, on the west; this latter mountain appearing to be composed chiefly of dark mica-schists. Near Hutshi, the sources of the Nordenskiöld River, one of the tributaries of the Yukon, were reached. Up to this time no attempt at a survey had been made, but at Mr. McArthur's request I had taken a few observations for latitude.

“At Hutshi I began a compass and paced survey of the trail down the Nordenskiöld River, and continued this survey down to the Lewes River, where we arrived on July 12th.

“Although the greatest possible care had been taken of the horses <sup>Visit made to Dawson.</sup> they were now very much run down. I therefore left them here in charge of the men and in good pasture, and descended the river to Dawson, where I arrived on the 16th of July. Mr. McConnell, of this Department, had arrived there the day before, and together we examined Bonanza, Eldorado and part of Dominion creeks. Our report on this work is given on another page.

“On the 7th of August, I again reached my camp at the mouth of the <sup>Rejoin the party.</sup> Nordenskiöld River, but unfortunately some inflammatory disease had broken out among all the horses there, Mr. Dalton's as well as mine,

and instead of being in good condition for the work of the rest of the season they were lean and weak.

“At Dawson Mr. S. N. C. Treadgold, who was visiting the country in the capacity of a special correspondent of the *Mining Journal*, offered to accompany me for the rest of the season, and being rather short of men I was glad to avail myself of his services.

Travel west-  
ward.

“Acting on a suggestion made by Mr. McArthur, we returned up the Nordenskiöld River for a short distance, and then turned westward up the west branch of that stream, for which I would suggest the name Wright River, after Professor R. Ramsay Wright of Toronto University. We ascended the valley of this stream for most of its length, and then turned south-westward, through a ridge of rounded granite mountains, to a valley in which is a stream flowing towards the west. This valley was descended to the point where it is crossed by a trail from Hutshi to Fort Selkirk, and here the stream was recognized as that which had been called the Tahté by Mr. McArthur. We then travelled south to the Indian village of Aishihik, hoping to meet some Indians who would indicate to us the most feasible route into the country further west, but the place was found to be entirely deserted, so that we were thrown back on our own resources.

Trail by  
Tahté River.

“Finding a foot-trail leading to the west, we decided to follow it. It led us into a mountainous country underlain by mica-schist, limestone, etc. The second day we came to a creek flowing westward, but after following it, it turned to the north, and three days afterwards brought us to a wide valley which was evidently that of the Tahté River, and not far from the place where we had left that river a week before.

Reach White  
River valley.

“We descended this magnificent wide valley, which has finely terraced sides, for five days, until we found it opening out into the valley of White River. We thus found that the stream which we had been following was the Nisling River, which had been crossed by Dr. Hayes in 1889, on his overland journey from Fort Selkirk to the Copper River.

Return  
journey.

“It was now the 29th of August, and a hard frost on the night of the 27th had begun to strip the leaves from the poplars, warning us that the summer was over, and that the Chilkat Mountains, near the coast, would soon be covered with snow. We therefore turned back up the Nisling River, followed it up to the crossing of the Selkirk trail, and then followed that trail southward to Aishihik. From Aishihik we followed the high ridge west of Aishihik Lake, crossed the Aishihik River, and reached the west side of Hutshi Lake, just as Mr. Hanley camped on its eastern side with a large band of horses.

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“The next morning, Sept. 12, we came up with Mr. Hanley, and as most of the horses that we had left were about used up, we hired <sup>Animals exhausted.</sup> three fresh ones to help us out to Pyramid Harbour. On September 17th, we reached Dalton post, and on the 21st the post of the North-west Mounted Police at Pleasant Camp. Besides the horses that we had hired from Mr. Hanley, there were six of our own remaining. We had spared them all summer as much as possible, by carrying just what was absolutely necessary for the work in hand, and by walking almost all the time ourselves, but the change in their conditions of life from southern British Columbia to the Yukon district, had proved too much for them, and they had dropped off one by one. Three of the six could go no farther, and Inspector Jarvis kindly loaned us three others in their place to take us down to the coast. Pyramid Harbour was reached on September 25th, Skagway on the 26th, and Ottawa on the 13th of October.

“During the season, from the time of leaving Pyramid Harbour <sup>New survey made.</sup> until my return to the same place, I travelled about 1300 miles. A geological examination of the country was made throughout most of this distance, and new surveys were made aggregating 300 miles in length. A large number of photographs were also taken, showing the general character of the country traversed, the appearance of the rocks underlying the country, the gravel terraces, the hill and valley gold-claims, the mode of sinking shafts, of making open cuttings, of rocking and sluicing gold, etc.

“Fifty-one species of plants were collected, and these have since <sup>Plants collected.</sup> been determined by Mr. J. M. Macoun. Of these (1) *Parrya macrocarpa*, (2) *Phlox Richardsonii*, and (3) *Gentiana frigida* had not before been found in the Yukon district, and the last-named not before in any part of Canada. The localities at which they were found were, respectively: (1) summit of Father Mountain, about 6000 feet, (2) Selkirk Trail, and (3) tributary of Nisling River, above the tree-line.

### *The Dalton Trail and its Vicinity.*

“The country in the vicinity of the Dalton trail, may be divided into <sup>Topography of Dalton trail.</sup> two parts, with topographical characters sufficiently distinct and persistent to be almost everywhere recognizable, viz.:—The Chilkat Ranges, a name here proposed for the high range of mountains extending north-westward and westward from the Lynn Canal and the table-land of the interior.

“ The Chilkat Mountains form a rough irregular range, extending inland for about a hundred miles from the main coast-line of the Pacific Ocean, which coast-line stretches south-eastward from Yakutat Bay to Cross Sound, and thence onward along the outer side of the Alaskan Archipelago.

“ In the district at present under consideration, which lies north-west of the head of Lynn Canal, these mountains form an elevated region whose outer side descends more or less steeply towards the ocean, while many jagged, rocky peaks rise to heights of 6000 to 8000 feet above the sea.

Effect of  
glaciers.

“ The mountains are intersected by deep valleys, of which the higher parts, lying at some distance back from the coast, are for the most part filled with vast fields of snow and ice, from which glaciers radiate in all directions, some descending steeply towards the coast, while others move landwards and give rise to some of the largest streams draining the country, notably to White River, and to many of the tributaries of Alsek River. The ice has, however, withdrawn or melted away from some of the valleys, and has left their sides with beautiful smooth well-rounded slopes. Of these ice-free valleys, none is more conspicuous or persistent than that which, in its outer coastal portion, is drained by the Chilkat and Klehini rivers; while farther inland its waters are collected into the Tatshenshini, or most easterly branch of the Alsek River.

Old Indian  
trail.

“ In this valley, the Chilkat Indians of the village of Klukwan, and of the other villages on the banks of the Chilkat River, have for ages had a foot-path by which they travelled between the coast and the interior, in order to trade with the more remote tribes living on the upper waters of the Alsek River. This path has been cut out and improved by Mr. J. Dalton, until there is now an excellent trail for pack-horses from the coast into the interior, appropriately known as the Dalton trail.

Height-of-  
land.

“ This trail follows the above-mentioned valley from Pyramid Harbour to Klukshu Lake, a distance of about 120 miles, running in a general north-westerly direction diagonally through the Chilkat Mountains. In this valley the height-of-land, which is at a distance of seventy miles from Pyramid Harbour, has an approximate elevation of 2650 feet above the sea, being more than 200 feet lower than the summit of the White Pass, and 850 feet lower than the summit of the Chilkoot Pass, while at the same time, being more distant from the coast, the approach to it is much more gradual.

Character of  
wide valley  
followed.

“ The height-of-land, or water-parting, is hardly recognizable as such, being only a wide, flat, swampy portion of the bottom of the valley.

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Beyond it, the valley declines gradually north-westward, with a slope of about twenty-five feet to a mile, without any abrupt break or dip of any kind. Its bottom varies from half a mile to a mile or more in width, and its sides rise in gentle grassy slopes and terraces for a couple of thousand feet, above which tower mural precipices, and broken rocky cliffs.

“ For about fifty miles from Pyramid Harbour, the valley is everywhere, except on the flooded land besides the streams, wooded with a dense coniferous forest ; but on the upland country, for the next fifty miles, very little timber is anywhere to be seen, the lower lands and the mountain sides being alike covered with short grass, or a dense growth of dwarf birch and willow.

“ The interior table-land is also a decidedly mountainous country, <sup>Interior country.</sup> but the slopes are more gradual. Most of the peaks are gently rounded, and there are no glaciers or permanent snow-fields, so that while a great number of peaks may be in view at one time, and though these peaks may in some cases rise as high as from three to four thousand feet above the bottoms of the adjoining and intervening valleys, the whole landscape has the appearance of a hilly or lumpy upland, the higher portions covered with grass or scrub, while groves of dark, green spruce may partly cover the bottom-lands. In many places, level terraces follow along the sides of the mountains, forming wide and easy steps, which are usually thinly wooded with poplar, or covered by a rich grassy turf. These dry, thinly wooded terraces, and in fact much of this inland region, reminds one strongly of parts of the attractive country near the banks of the Saskatchewan River, east of the Rocky Mountains.

“ The wide valley mentioned above, continues northward through this <sup>Continuation of wide valley.</sup> interior table-land. North of Dalton post, it is drained by the Unahini River, beyond which lies Lake Dezasdash, and that branch of the Alsek River which flows from it. From the north bend of the Alsek, one branch of it continues across to the Mendenhall, and thence down the Nordenskiöld to the Lewes, but another branch would appear to turn northward down the Alsek, then northward up the Aishihik River to Aishihik Lake, over Aishihik Lake, and along the wide flat valley north of it to Nisling River, down Nisling River to White River, and down White River to the Yukon River ; having a remarkably direct course throughout the whole distance. This valley, whether entered at Pyramid Harbour, or at some point which may be easily <sup>A direct route.</sup> reached by the White Pass, is undoubtedly the shortest and easiest known route from the coast to the heart of the gold district of the Klondike.

Plants and animals.

“ Many natural fruits common east of the mountains, here grow and ripen in great profusion, and it seems not at all impossible that most, if not all, the grains, fruits and vegetables that will ripen in the Edmonton country will also ripen along this portion of the Dalton trail.

Rink or Five Finger Rapids.

“ Wild animals, as a rule, are rather scarce, but one small mammal proved to be of more than ordinary interest. This was a ground-squirrel, (*Spermophilus empitra*), which was very common on the terraces, everywhere from Rainy Hollow north to Rink or Five Finger Rapids, its burrows being conspicuous on all the dry places. In these burrows the animals live and continue active both in summer and winter, and in order that they may be warm and comfortable, the burrows invariably descend below the limit of frost. Consequently, wherever they are found, the frost cannot be more than a few feet deep, or such a depth as the ground would freeze in winter and thaw again in summer. Now where the ground is permanently frozen the frost extends to great depths, and therefore, wherever these ground-squirrels can burrow and live the ground is not permanently frozen. On all the dry benches and uplands, as far north as Rink at all events, there is no permanently frozen ground, although many of the boggy places, whether in the bottoms or on the sides of the valleys, are certainly underlain by frozen ground throughout the year. The fact that these benches are not permanently frozen, removes one of the strongest objections that has been raised to successful hydraulic mining in the Yukon District.

Geological features.

“ The rocks observed in the south-western portion of the Yukon district, range in age from the Archæan up through the Palæozoic, Mesozoic and Tertiary to Pleistocene sands and gravels, and in character they include granite, diorite, porphyry, porphyrite, diabase, trachite, rhyolite, basalt, lava, volcanic ash, mica-schist, sericite-schist, argillite, marble, quartzite, conglomerate, sandstone, etc., the last seven being more or less altered aqueous sediments which had been deposited one above another in the seas of the different geological epochs.

Granites.

“ A massive gray and reddish-gray granite forms the main structural axis of this country, extending as it does north-westward from the head of Lynn Canal, past Lake Dezadeash, and away to the westward of Aishihik Lake. This is doubtless a continuation northward of the granite of the Coast Range of British Columbia, and like it is very barren of minerals of economic value.

Rocks overlying granites.

“ Resting on or against the granite, and often very much disturbed and altered by it, is a dark argillite, interstratified with heavy beds of white crystalline limestone. In many places the argillite passes

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below into a highly crystalline mica-schist. These schists and argillites are usually cut by veins and stringers of quartz. Wherever they underlie the country, gold can usually be washed out of the sand in the bottoms of the valleys. Thus they appear to be everywhere, to some slight extent at least, impregnated with gold. They are very widely distributed, extending from the west side of Lynn Canal up the west side of the Chilkat and Klehini rivers, along the north-west side of Tatshenshini River, through the Dalton Range, and northward, past Aishihik Lake to the Nisling or Tahté River, beyond which they are probably continuous with the schists that outcrop along the banks of the Yukon, from the mouth of Selwyn River to Dawson.

“ One of the most conspicuous and wide-spread rocks in the district, Porphyrates. is a dark-green porphyrite, which has broken through and altered the argillites and limestones above mentioned. It composes the mass of many of the highest and most conspicuous mountains in this portion of the interior, among which are mounts Maloney and Fairview, while the Sifton Mountains are said to consist largely of the same material.

“ North-eastward, as far down the Lewes River as Rink Rapids, Glaciation. the country has been more or less severely glaciated, by an ice-sheet that extended inwards from the high ranges bordering its coast. This ice-sheet pared down many of the inequalities of the surface, and deposited a thick coating of unstratified boulder-studded clay or till in the bottoms of the valleys. Where the till has been chiefly derived from the argillites or mica-schists, as in parts of the valley of the Kaskawulsh River, it appears to contain a small amount of fine gold, some of which may eventually be recovered by inexpensive hydraulic processes.

“ Terraces of stratified clay, sand or gravel are common on the sides Terraces. of some of the valleys, where they have been formed in lakes that existed at the foot of the great ice-sheet, or by streams that flowed from it. Some of these contain gold, where the deposits composing them have been derived from argillites or mica-schists.

“ Specimens of coarse gold, were shown to the writer as having been Gold. taken from Alder Creek and other streams in its vicinity. The country-rock is reported to be an argillite or mica-schist, and the gold has doubtless been derived from it. Whether it occurs in large quantities or not is as yet uncertain, but the question is deserving of further investigation.

“ For some years past, it has been reported that native copper was to Native copper be found on some of the upper tributaries of White River. An effort was made to visit the locality, but the condition of our horses, rendered

our progress through the country very slow and thwarted this object, though we reached the valley of White River at the mouth of Nisling River. Here some Indians whom we met, and who had some small masses of native copper in their possession, reported that the copper country was still six days' journey distant, and that the copper was invariably picked up in the gravel on the stony flats beside the stream. This report of its mode of occurrence agrees closely with other accounts which were received. Its occurrence *in situ* is not yet known, but quite probably it is associated with a basic igneous rock such as the porphyrite mentioned above.

Copper ores.

"Early in the year, fragments of copper-pyrites were observed among the gravel-wash from a glacier, a short distance south of Glacier Camp. On my return in the autumn to the camp of the Mounted Police at Pleasant Camp, I was shown some fine specimens of bornite and chalcopyrite, with galena, which were said to have been found near Rainy Hollow. These discoveries would appear to indicate the existence of deposits of native copper or copper ore which may, in the near future, be of great economic importance."

Work by Mr.  
R. G. McCon-  
nell.

After his return from the field in 1897, Mr. R. G. McConnell was employed during the greater part of the winter and spring in working up the notes and collections made by him and his assistants in West Kootenay. When it was determined to undertake explorations in the Yukon District, part of which he had previously traversed in 1887, he was assigned to this work. His instructions were to make a geological reconnaissance by the chief eastern tributaries of the Lewes River and of the country adjacent to these, as well as a preliminary examination of the geological features of the route between Teslin Lake and the Stikine. He was also to devote a portion of the season to a general inspection of the geological conditions on the richly auriferous creeks of the Klondike region. All the main objects thus outlined were successfully covered during the rather short available season. The results are given as follows by Mr. McConnell:—

Crossing the  
Chilkoot Pass.

"I left Ottawa on May 13th for the Yukon district, accompanied by two Indians from Lake Temiscaming, who acted as boat-men and proved to be both capable and trustworthy. We reached Vancouver on May 19th and Dyea on May 27th. Our outfit, consisting of four months' supplies for three men, a Peterborough canoe and a canvas boat, was taken across the Chilkoot Pass from Dyea and landed at the head of Lake Bennett by the Chilkoot N. & T. Co. in three days. The ice on the lake broke up in the first week in June, and we were able to proceed immediately down the river. We left the head of Lake Bennett carrying our outfit in the canoe and



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canvas boat, and reached the mouth of the Big Salmon without accident on June 12th. From this point a traverse and geological examination was made up the Big Salmon to the head of Quiet Lake.

“The Big Salmon has an approximate length of 142 miles, to the chain of lakes at its head, or, including the latter, a length of about 170 miles. Its width varies from thirty to a hundred yards. In a few reaches, it is a smooth, placid stream with an easy current, but for most of its length it is shallow and rapid, interrupted by numerous sand-bars and gravel-bars, over some of which the river has a fall of several feet. Rapids occur at the mouth of the North Fork and at another point about seventy miles further up, but can be easily run by small boats, except at low water. The Big Salmon cannot be considered a navigable stream for steamers, even at high water, and at low water small boats, when loaded, find difficulty in navigating it.

Big Salmon River.

“For forty five miles above its mouth, the Big Salmon occupies a wide wooded valley bordered by rounded hills. Above that point it turns to the east and enters a wide range of mountains, through which its valley runs from its source in Quiet Lake. The direction of the river for the first thirty or forty miles above the South Fork, is generally transverse to that of the mountain ranges, but is parallel to them further up. The valley becomes much narrower after the mountains are entered, being in some places reduced to a width of less than a third of a mile, and is bordered by steep-sided mountains and mountain ranges from 3000 to 4000 feet in height above it, on some of which patches of snow exist in sheltered nooks throughout the year. It is terraced up to heights of from two to four hundred feet along its entire course.

Character of the valley.

“The main tributaries of the Salmon are the North Fork, entering about twenty-five miles above its mouth, the South Fork, which comes about twenty miles further up, and a stream which joins it from the east a short distance below the lake. Besides these a number of large streams, heading in the adjoining mountain ranges, join it at various points along its course.

Tributaries.

“The Salmon River heads in a chain of lakes about twenty-eight miles in length, connected by short streams with little current. The highest lake is the largest and is known as Quiet Lake. It is about nineteen miles in length with a maximum width of two and a half miles. The depth was not measured, but the lower, or Island Lake, gave a maximum sounding of 138 feet. Quiet Lake is bordered on the west by high mountains, and on the east by a rolling plain that extends to the Nisutlin River, four to five miles distant, and is broken by a number of rocky hills, the highest of which rises 1900 feet above it. The

Lakes at head.

valleys of the Salmon and the Nisutlin are united at the upper end of Quiet Lake and also at Island Lake. The longer diameter of the latter is transverse to the general direction of the rivers, and follows an old valley connecting the two streams, now filled up with glacial deposits.

Forest

“The valley of the Salmon is generally fairly well forested along the bottoms and up the mountain slopes to heights of from 1500 to 2000 feet above the river. The principal forest trees are the white and black spruce, the former often attaining a diameter of a foot or more, the black pine, a variety of fir, birch, aspen and balsam poplar.

Geological section.

“The Salmon River valley, except for the first forty miles, affords a very good geological section. Below the North Fork, the valley is wide and exposures are infrequent. The rocks seen consist of greenish tufaceous sandstones, passing into agglomerates and slates, cut by diabases, and a whitish porphyritic rock of geologically recent appearance.

Granites.

At the North Fork, a range of hills four miles east of the Salmon, consists of reddish medium grained granites, and the same rock is reported to occur eastward along this stream for a number of miles. Between the North and South forks, no outcrops were noticed. Above the South Fork, the valley enters the mountains, becomes narrower, and exposures are frequent.

Stratified rocks.

The rocks above the South Fork consist of micaceous schists, quartzites, greenish schists and limestones, cut by granitic dykes. The dips are vertical or to the west. The green schists and associated rocks are succeeded, in going up the river, by a wide band of dark slates and schists interbanded with green schists, and further on by whitish granular limestones. The limestones are cut by a wide band of grayish granite. They dip to the east, except near the granite, where they are vertical, and are underlain by a great thickness of quartzite and micaceous schists alternating with bands of crystalline limestone.

Great anticline.

These rocks resemble the Shuswap series of the Selkirk Range. They are bent up into a great anticline, and are exposed, with little variety in composition, for many miles along the valley. The axis of the anticline crosses the Salmon near a great bend which the latter makes to the north. Above that point the dips are to the east. The Shuswap schists are overlain about forty miles below the lakes, by a limestone band similar to that which occurs in the western limb of the anticline. The limestone is exposed along the river for some miles and forms conspicuous mountain ranges on both sides of the valley. It is succeeded, in ascending the river, by dark slates and schists holding bands of greenish tufaceous beds and some limestones. The tuffs in places have been altered into serpentines. The slates and associated green schists are exposed along the Salmon to the

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lakes and along the lakes to a point about half way up Quiet Lake, where they are cut off by a great granite area which can be traced southward along the Nisutlin River to Teslin Lake. Another granite mass.

“The rocks of the Salmon River anticline consist, in a general way, of three great divisions. A basal series of quartzitic and micaceous schists and crystalline limestones, an intermediate granular limestone, and an upper division consisting of dark slates, green schists, tuffs, limestones and serpentines. No fossils were found and it is impossible to fix the age of these formations with any certainty. Sequence of strata.

“A number of prospectors ascended the Salmon during the summer, but most of them were inexperienced, and little effective work was done. Several shafts were commenced, but the influx of water prevented deep sinking, and none of them reached bed-rock. Fine gold is found all along the Salmon, and a number of the bars below the North Fork have been worked successfully during low water in former years. Coarse gold was stated to have been found in a couple of places in the lower part of the river, but I was unable to verify the reports. Fine colours were obtained in the wash of many of the streams emptying into the Salmon, and on a bar at the mouth of the stream which joins the latter three to four miles below the lakes, a very good prospect was obtained. Small quartz veins cut the schists in a number of places, and at one point west of Island Lake, several large veins cutting a dolomite band were noticed. Specimens of this quartz were collected but have not yet been assayed. An angular fragment of drift quartz, holding gold, was found at the mouth of a stream about twenty miles below the lake. The country in the neighbourhood of the upper part of the Salmon, based as it is on old schists cut by great eruptive masses, offers a very favourable field for prospecting, both for quartz and placer gold. It was run over by a number of people during the past summer, most of whom, however, had little knowledge of any branch of mining, and very little genuine prospecting was carried out. Prospecting for gold. Quartz veins.

“After finishing the examination of the Salmon, I went down the Yukon to Dawson, and spent two weeks in a hasty examination of a part of the Klondike region, some notes on which is given in another part of this report. From Dawson I came up the Yukon in a steamer to the mouth of the Salmon, and spent the remainder of the season on Teslin River, Teslin Lake, the Nisutlin River and the Teslin trail. Descend river to Dawson.

“The Teslin or Hootalinqua River is one of the main feeders of the Yukon. It is a large stream, averaging about 125 yards in width when confined, but widening out around islands, and with a length, according to Mr. St. Cyr's survey of 1897, of about 100 miles. The current is pretty Teslin or Hootalinqua River.

Navigation of Teslin. swift for the first seventy miles, running from three to five miles per hour, with occasional accelerations where bars cross the stream. Thirty miles below the lake, the grade lessens and the current drops to less than two miles an hour. No rapids occur on the Teslin, but bars are frequent and on some of these the water in the autumn is so shallow as to interfere with navigation. The steamer *Anglian* which was built on Teslin Lake, descended without much difficulty in the early summer, but was unable to ascend again towards the end of August, on account of the shallowness of the water on the bars. The Teslin differs altogether in character from the Lewes. The latter is fed largely from the glaciers of the Coast Ranges and remains fairly high until the cold weather sets in. The Teslin, on the other hand, has no such reserves to draw upon. It rises in May with the melting of the snows, is in full flood about the first week in June, and then falls steadily, as the lakes are gradually emptied, throughout the season. The summer of 1898 was an exceptionally dry one, and it is claimed that the Teslin was lower than usual on this account, and that in ordinary seasons its navigation is practicable until late in the autumn. This is quite possible, but as no good records for preceding years exist it is still an open question.

Teslin valley. "The valley of the Teslin averages about a mile in width, from the mouth up to within a few miles of the lake, where it widens out to about two miles. It is bordered by high lumpy hills and low mountain ranges throughout its whole length. Between the river and the base of the hills, is a series of flats, the highest of which has a remarkably uniform elevation all along the river of from 300 to 320 feet. The immediate banks of the river are generally terraced, but high cut-banks of white and light-yellowish silts and boulder-clay occur at the elbows of some of the bends.

Geological section. "The geological section along the Teslin is not very satisfactory, as the course of the river is almost parallel to the strike of the rocks. Near the mouth, and for some miles up the river, a recent volcanic rock outcrops, the character of which has not been determined. It incloses fragments of slate and is succeeded by a band of crushed and altered slates. The slates are followed by reddish-weathering tuffs and agglomerates, and frequent exposures of these rocks, alternating with slates, appear along the river or on the hill-sides nearly all the way to the lake. They inclose occasional bands of nodular limestone. At the mouth of Boswell River, which enters the Teslin from the east, a conspicuous range of bold mountains is built almost entirely of grayish and reddish-weathering limestone. Above Boswell River, dark and greenish slates and schists, tuffs and other old volcanic fragmental rocks resume and continue to the head of the river.

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“Fine gold is found in a number of bars and beaches along the Teslin, but as a rule in inconsiderable quantities. Some work was done on a few of the bars during the past season, but the results were stated to be not very satisfactory. The streams entering the Teslin are few in number and with one or two exceptions insignificant in size, and as they do not as a rule traverse an especially promising gold country, it is probable that the gold in the Teslin gravels is largely derived, from the washing away and concentration, by the river, of the glacial and stream deposits which floor the valley.

“The Nisutlin River was traced into the Pelly Mountains, and the branch followed was found to head within twenty miles of the Pelly River. The Nisutlin enters Teslin Lake about thirty miles above its lower end, and is its principal feeder. It has a width of from 200 to 400 feet. The current is swift to the first fork, a distance of about three miles, above which, for many miles it does not exceed two to three miles an hour. The river winds, in its lower reaches, through a low, alluvial plain, apparently a filled-up bay of the lake, which gradually narrows to the north. The valley is wide, often exceeding ten miles, and is bordered by low round-topped mountains rising from 3000 to 4000 feet above it. A wide forested plain spreads from the immediate valley of the river to the foot of the mountains. The river is crossed by numerous shallow sandy bars in this lower part, and by gravel bars further up where the current is swifter. The water on many of these was found to be too shallow to allow of the navigation of the river by steamers of any size, late in the season.

“The Nisutlin valley has a nearly north-and-south direction from Teslin Lake to a point opposite Quiet Lake on Salmon River, a distance of about seventy-five miles. The valley still continues to the north above this point, and is occupied by a fork of the Nisutlin, but the main river bends suddenly to the east and follows a north-easterly course through a wide range of mountains that extends north-eastward almost to the Pelly. The Nisutlin, after entering the mountains, becomes narrower and swifter, steep bars are frequent, and long bouldery rapids render its navigation, even with small boats, difficult and dangerous. We cached our canoe at the foot of one of these rapids and continued the exploration on foot.

“About twenty-five miles from the point at which the mountains are entered, the river again forks. The main branch comes from the east and appears to head in a wide lake-dotted plain, a view of which was obtained from the summit of a high mountain at the forks. The route from the Liard leads down this branch. The left fork, which was the one followed, as it promised a better geological section, breaks through

the range in a north-easterly direction. Above the forks just mentioned, the branch we ascended dwindles rapidly in size as numerous feeders from both sides are passed. About twenty miles from the forks we turned up a small stream flowing from the summit range, and five miles further on reached the Nisutlin-Pelly watershed. This was crossed by a good pass about 4000 feet above the sea, flanked by rugged mountains about 3000 feet higher. We continued on down a stream to the north, for about seven miles, and then returned. From the summit of a mountain opposite our last camp, the Pelly was seen flowing in a wide valley, at a distance of about twenty miles. The Pelly Range, where crossed, runs nearly east-and-west. South of the divide, it consists of a number of well-defined subordinate ranges striking east-and-west. North of the watershed, it has been carved into a confused mass of mountains and mountain groups by a number of branching streams tributary to the Pelly. Some of the peaks in the watershed and adjoining ranges exceed 7000 feet in height. The valley and lower slopes of the mountains are generally wholly or partially wooded up to a height of about 3000 above the sea. Above that point, grassed and moss-covered slopes and bare peaks and ridges prevail.

Pelly River.

Character of Pelly Range.

Geological section on Nisutlin.

“The Nisutlin River, until it leaves the main valley east of the Salmon lakes, does not afford a good geological section. The valley is wide, and the river is bordered by wide wooded flats composed of alluvial or glacial materials. Occasional traverses were made to the mountain ranges, on both sides, on the way up, and some data were collected, but the section is incomplete. Greenish volcanic rocks, usually more or less schistose, occur along Nisutlin Bay. At the head of the bay, a wide band of granite crosses the valley. In the lower reaches of the river, green schists outcrop in a few places along the valley, and then exposures cease. The mountains west of the valley are composed principally of grayish granite and form part of the great granite area, mentioned before, that stretches from Quiet Lake south, to, and along Teslin Lake. The granite crosses the valley and outcrops in the mountains east of the Nisutlin above the first fork, and extends north about half way to Quiet Lake. Above that point, green schists interbanded with limestone come in, and are exposed in the ridges east of the river for many miles to the north. Greenish schists, cut by granite dykes from the Quiet Lake granite area, also outcrop in some small hills on the portage from the Nisutlin River to Quiet Lake.

“Above the point at which the Nisutlin bends to the north-east and cuts across the mountain ranges, exposures become more frequent. Green schists and dark slates, interbanded with some limestone or

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dolomite, outcrop for several miles, and are succeeded by a coarse-grained, reddish porphyritic granite which continues almost to the upper forks. Beyond the granite, green schists resume, and are succeeded by lead-coloured and black slates and schists and then by quartzites and dolomites. The dip is to the west and the section is a descending one. The quartzites and associated rocks are followed by a band of heavy limestone beds that forms a conspicuous range, and then by dark slates and schists, and green schists and limestones which continue to the summit of the Pelly Range. At the summit, the beds have an anticlinal attitude. They consist there mostly of dark slates and schists, with some agglomerates, succeeded, on the north slope of the range, by green schists and limestones. A band of limestone three miles east of the summit contained some corals and fragments of other fossils which are probably of Carboniferous age. Old Cambrian schists such as occur on the upper part of the Big Salmon River, were not found on the Nisutlin, and the stratified rocks seem to belong mostly to the Upper Palæozoic, while some may even be of Mesozoic age.

“Mining operations on the Nisutlin, so far, have been confined to prospecting. Fine gold occurs along it at various points, but up to the present has not been found in paying quantities. A great development of quartz veins occurs south of the summit on the branch ascended. The veins are small but exceedingly numerous. They occur mostly in the dark slates, and schists and greenish schists. Quartz boulders and pebbles form the principal constituents of the gravels in the streams flowing from the range. The streams and mountains in this vicinity seem well worth prospecting.”

Occurrence of gold.

“The shores of Teslin Lake were hastily examined on the way out. This lake was surveyed by Mr. St. Cyr, D.L.S., of the Dominion Lands Branch, in 1897. It is a long, narrow sheet of darkish water, from one to two miles wide, and with a length, according to survey, of about sixty miles. A line of soundings across the lake north of Dawson Peaks gave a maximum depth of 435 feet. The bottom of the lake, outside the steep shore-slope, is a nearly level plain covered by about 400 feet of water. The lake is almost completely encircled by medium-sized mountains and mountain ranges, the most prominent of which are the Dawson Peaks, known locally as the ‘Three Aces’ which are situated about half way up the lake, on the west shore, and have an elevation of 3800 feet above the lake. The mountains are separated from the shore of the lake by a wooded plain of varying width, and at Hall River a lake-sprinkled area of rolling country extends some distance to the south-west.”

Teslin Lake.

Rocks on  
Teslin Lake.

"The rocks along Teslin Lake are very similar to those on the Nisutlin River. They consist of green schists, tuffs, agglomerates and limestones. Grayish granite, somewhat similar to the gray granite of the Kootenay country, occurs along the east shore of the lake, south of Nisutlin Bay, and a spur crosses the lake and is exposed opposite to and in the Dawson Peaks. Granite also comes in on the west shore of the lake two miles below the Narrows and extends south to near Hayes River. Above Hayes River, dark slaty rocks, tuffs and limestones resume, and continue to the head of the lake.

Trail to Tele-  
graph Creek.

"From the head of Teslin Lake we came out by the Teslin-Stikine trail to Telegraph Creek. This trail has a length of about 151 miles, and with the exception of about fifteen miles in the vicinity of Spruce Mountain, has been well graded and corduroyed throughout during the past summer, and is now in excellent condition. A partial examination was made of the rocks along the trail. From the head of Teslin Lake to the Naylin River, a distance of about fifty-seven miles, the beds consist of a succession of rusty-weathering, dark, slaty rocks, tuffs, green schists and grayish limestones. The Naylin River valley, at the trail-crossing, cuts into yellowish-weathering, soft sandstones

Drift lignite.

of Tertiary age. Drift lignite occurs on the bars, but no beds were seen. South of the Naylin River, the Tertiary sedimentaries are succeeded by dark and greenish massive volcanic rocks, often slightly schistose and occasionally partly serpentinized, and further on by dark slates and greenish tuffs and conglomerates. At the 'Hudson's Bay' summit and for some miles to the north, the surface is covered by comparatively recent sheets of volcanic rocks. Three distinct flows are represented by an older compact basalt, a light-coloured acidic rock, probably a rhyolite, and a younger vesicular basalt. The wide plateaux of Level Mountain on the east and the Heart Mountains on the west of the trail are composed, in part at least, of similar rocks. East of the Hudson's Bay post, the valley of Hackett Creek is bordered above by basaltic cliffs on the north side, and by andesites and other porphyritic volcanics below. Pyrite, pyrrhotite and chalcopyrite are found in small quantities in these rocks. Farther to the east, tuffs, agglomerates and allied rocks partly replace the massive volcanics. At the 30-mile post, a band of yellowish-weathering dolomite crosses the trail. From the Tahltan River across the Telegraph summit to the Stikine, the rocks consist principally of fine-grained greenish tuffs, agglomerates and conglomerates, cut in places by augite-porphyrites and other massive volcanics of greater antiquity than those above referred to.

Basaltic  
rocks.



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“ While delayed at Telegraph Creek, an examination was made of some claims on Nine-mile Creek, nine miles above Telegraph Creek, that have excited considerable interest. These claims have been staked out on a boss of eruptive rock, probably a diorite, about a third of a mile in width. The diorite varies from fine to coarse-grained in texture, is very basic and is filled in places with magnetic iron. It is bordered by greenish volcanic rocks, probably altered tuffs, on the west, and by a syenitic or granitic area on the east. Dykes of the last-named rocks penetrate the diorite in all directions, and occasionally carry small pockets of bornite and other copper minerals. A few small quartz veins also occur, but are unimportant. A number of specimens of the diorite, collected at different points along the face of the exposure, have been assayed, and are stated to have yielded from traces up to over a hundred dollars in gold to the ton. A further examination of a larger quantity of the gold-bearing rocks is now being made by Mr. J. C. Field, M.E., for the North American Exploration Company, and if the results of the previous assays are borne out, it will have an important bearing on the district, as the supply of material is almost unlimited. Assays of the specimens collected by myself will also be made in the Survey laboratory.

“ Work for the season was finished at Telegraph Creek. From that point we came down the Stikine in a small boat to Wrangel, and returned to Ottawa.”

### PRELIMINARY NOTE ON THE GOLD DEPOSITS AND GOLD MINING IN THE KLONDIKE REGION, YUKON DISTRICT.

Messrs. R. G. McConnell and J. B. Tyrrell are jointly responsible for the following memoranda and observations bearing more directly on the question of the gold deposits and connected matters, the principal gold-bearing creeks of the Klondike having been visited by these gentlemen in company.—

“The productive part of the Klondike Gold District, as at present known, covers an area of 1000 square miles, and is situated between the Klondike and Indian rivers, tributaries of the Yukon, and east of the latter river. The region is traversed by a multitude of streams, flowing for the most part in deep trough-like valleys, among the most important of which are Bonanza Creek, (with its rich tributary Eldorado,) Bear, Hunker, Too Much Gold, and All Gold creeks, flowing into the Klondike; and Dominion, Sulphur and Quartz creeks, branches of Indian River. The larger creeks are separated by long ridges gashed by the smaller streams and terminating upwards in even slopes or lines

of rounded hills. The general aspect of the district, viewed from one of the higher elevations, is hilly, owing to the fact that the main ridges and creeks radiate out in a general way from a central point known as the Dome. The main ridges rise above the valleys from 1200 to 1500 feet, and in places are somewhat higher. The Dome, a name given to the prominent hill surmounting the ridge separating the tributaries of Indian River from the Klondike, and one of the highest points in the region, has an elevation above the Yukon River of about 3000 feet. East of the hilly region centring in the Dome, at a distance of eight to ten miles, is a wide plain drained by a branch of the Klondike, beyond which, and closing in the horizon, runs a high range of rugged peaks. The district, with the exception of the higher peaks and ridges and occasional flats along the streams, is covered with a fairly heavy forest growth, consisting principally of the white and black spruce with some birch and poplar.

Productive  
area.

*“Productive area.*—The approximate area of 1000 square miles, given above as the probable extent of the known gold-field, refers to the district traversed by the gold-bearing creeks, and not to the actual area of pay gravels. The latter are confined to the bottoms of a few of the valleys and the lower slopes of the adjoining ridges and occupy a much smaller area. The rich creeks, so far, are only four in number, viz.: Eldorado, Bonanza, Hunker and Dominion, and by far the greater proportion of the remarkable yield of the last two years has come from Eldorado and Bonanza. The proved portions of the four producing creeks have an aggregate length of about thirty miles. A number of tributaries of the producing creeks, and other streams such as Bear, Sulphur, Two Much Gold, All Gold and many more, have yielded small amounts, and it is confidently expected that the prospecting work now in progress will result in large additions to the producing area.

Occurrence of  
gold.

*“Mode of occurrence of gold.*—The gold occurs in the gravels flooring the bottom of the valleys, in stream-terraces lining the lower slopes of the valleys and in a remarkable moraine or glacial deposit that occurs along the southern slopes of Eldorado and Bonanza creeks for some miles, and was also found north of the latter creek for some distance above its junction with Eldorado.

Stream-  
gravels.

The stream-gravels are very uniform in character throughout the district. They consist mainly of flattened sub-angular schist pebbles, ranging in size from small scales up to rounded or elliptical plates a foot or more in width, coarse round pebbles and boulders of quartz and occasional layers of clayey vegetable mould. The gravels rest on a slightly irregular floor of decomposed mica-schist and quartz-schist. They have a thickness of from two to eight feet and a width along the

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most productive portions of Eldorado and Bonanza creeks of from one hundred to four hundred feet. They extend across the valley-bottoms and increase in width with the gradual enlargement of the latter towards their mouths.

“The gravels are overlain in all cases by a layer of black argillaceous vegetable matter of three feet or more in thickness.

“The gravels are everywhere more or less auriferous, but, as in other placer camps, the concentration is very irregular, and the gold increases in quantity towards the bottom of the section, the greater part of the pay being found usually within eighteen inches or two feet of bed-rock. A considerable portion of the gold is also found in the soft decomposed and shattered country-rock on which the gravels rest, into which it has sunk often to a depth of two feet. The pay-streaks range in width from a few feet to a hundred feet or more. They are interrupted along the length of the creek by comparatively barren stretches, and in places more than one pay-streak is found in prospecting across the rocky bottom. The minimum richness of the gravels considered as ‘pay’ by the miners, on an average claim, is given at about \$5 to the cubic yard, but varied according to different informants from \$4 to \$7.

“The bench-gravels are of less importance than the stream-gravels and so far are only worked to an inconsiderable extent along Bonanza and the lower part of Eldorado Creek. The benches only occur at intervals along the sides of the valley and as a rule are rock-cut and not built up by stream deposits. They are found at varying heights up to an elevation of seventy-five feet or more above the bottom of the valley.

“In ascending Bonanza Creek the first bench claims were found opposite No. 60. below Discovery, on the south side of the valley. The bench has an elevation of seventy-five feet above the bottom of the valley and consists of sixty-seven feet of schists of various kinds terminating upwards in a flat surface and overlain by eight feet of gravels. The bench is wide, as it occurs on a projecting point, but does not extend far along the valley. The gravels are mixed with sand and consist of flat and sub-angular pebbles of schist often a foot or more across and rounder quartz pebbles. The gold is fine, but nuggets up to a value of \$1.35 are reported to have been found. The average yield of the gravels is stated to vary from 5 cents to 20 cents to the pan. Several bench claims similar in character to the one just described, but at lower elevations, were being worked further up on Bonanza Creek and on the lower part of Eldorado. On Hunker Creek, only one claim of the kind was being worked at the time of our visit, and on Dominion Creek none were in operation.

Hill claims.

“ Hill claims, situated on the moraines mentioned above as occurring along Bonanza and Eldorado creeks, are being extensively worked and in some cases have proved extremely rich. The moraines are situated at an elevation of from 150 to 200 feet above the bottom of the valley, have a width of from 200 to 300 feet or more and a thickness in the centre of 50 feet or more. The most productive claims occur along the lowest edge of the deposit and are worked by open cuts. The gravels are washed in rockers as the water supply is insufficient for sluicing. The morainic material is auriferous throughout, but the greater part of the gold is found at or near the sloping surface of the bed-rock at the bottom of a bed of coarse gravel, which consists of rock-flour, sand, pebbles and boulders. The gold, which is often in large nuggets, usually includes much quartz, and is rough and unrounded.

Character of deposits.

“ *Conditions of working.*—As stated above, the stream deposits consist of beds of gravel varying from two or three to fifteen or twenty feet in thickness, overlain by a mass of vegetable material, locally known as ‘muck,’ from four to eight feet or more in thickness. This muck is chiefly sphagnum bog, or peat, which has suffered little decay since it grew where it now rests. Both the peat and the gravel are permanently frozen, and as the peat is an excellent non-conductor of heat, the gravel continues frozen as long as it remains covered by even a thin coating of peat.

respecting.

“ After the prospector has found indications favourable enough to induce him to stake off a claim, he can readily prospect it thoroughly in winter by building a fire on the surface, removing the thawed earth, building another fire on the same spot, again removing the ground that has been thawed, and so on down to bed-rock. The sides of the shaft so sunk remain firm and solid. In summer, however, it is difficult to sink a shaft in this way, as the sides are likely to cave in, so that prospectors then build a fire upon the open ground, heat stones very hot and throw them down the shaft, covering them with brush or anything else that will prevent the heat from ascending. These stones will, in a night, thaw the ground to a depth of from 6 to 9 inches. This thawed ground is taken out, and the process is repeated until bed-rock is reached. If pay gravel is struck it may be thawed and removed from around the bottom of the shaft until a large circular ‘room’ is formed in the gravel. The gravel raised is afterwards sluiced, and the gold extracted from it.

Working creek claims.

“ The most economic method of working creek claims is by open cuts. The barren muck overlying the gravels is got rid of early in the season by the simple device of damming up the stream and leading it by several channels across the claim. The frozen muck dissolves readily

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and is usually completely removed by the stream in the course of a few week. The underlying auriferous gravels, as they become gradually thawed out and loosened by the sun and the various atmospheric agencies are shovelled into sluice boxes and washed in the ordinary way. When the surface is kept clean thawing proceeds at the rate of from two to four inches a day and bed-rock is reached before the season closes.

“On the dry benches in the northern part of the Yukon district, the ground was found not to be frozen in summer, and probably some of the drier and more open tracts in the Klondike district are not permanently frozen.

“On the hill-sides, as well as in the bottoms of many of the valleys, there are large quantities of earth and gravel that are too poor to admit of being worked by the ordinary method of sluicing or rooking now in use, and to yield good results will require to be worked on a larger scale and by more economical methods.

“The clays and gravels when exposed in summer in the creek beds and on the hill-sides, thaw very quickly leaving them loose and friable and in a favourable condition to be acted on by water. The available water in the Klondike creeks is however too limited for work on a large scale and the problem of obtaining a supply from other sources has not yet been solved. The grade of the Klondike River is fairly steep and it is possible that water might be flumed from it. This could only be done at a great cost, as the river would have to be tapped far up. The gravels are, however, exceptionally rich even in many portions of the creeks too lean to pay by present methods of working and would justify a heavy expenditure in their exploitation.

“To install extensive plants either for hydraulicing or sluicing blocks of ground, large sum of money will be needed, and in order to encourage the influx of this capital into the country it will be necessary to offer every facility to investors. It should thus be not only possible but reasonably easy for them to consolidate groups of claims or to obtain blocks of land of sufficient size to make it probable that they would receive a fair return for their investment, especially in the case of lands not sufficiently rich to be profitably worked by hand.

“*Gradients.*—As the valleys are wide and U-shaped, the grades of their beds are not at all steep. The Forks of Bonanza and Eldorado creeks, about 12 miles from Dawson, is about 500 feet above the Yukon River at that place, giving lower Bonanza and the Klondike River combined an average grade for that distance of something over 40 feet to the mile. Bonanza Creek, from the mouth of Cormacks Creek to the Forks, has a drop of about 500 feet, giving a fall of a little less than

100 feet to the mile. The grade of Eldorado Creek is somewhat steeper, the descent from the mouth of Chief Gulch to the Forks, a distance of about four and a-half miles, being about 700 feet, or an average of about 150 feet to the mile.

Proposed reservoirs.

"Above these points, the grades become rapidly steeper and the streams are narrower, so that it might be possible to build dams across them and construct large reservoirs, from which a supply of water could be obtained to serve for washing the lower parts of the hill-sides further down.

The gold of local origin.

"*Source or sources of the placer gold.*—As has been pointed out by Mr. J. E. Spurr of the United States Geological Survey, in the case of the country of Forty-mile Creek and further north and west, the gold in the Klondike has certainly been derived from the rocks of the immediate vicinity, for there is no evidence of the transportation of material of any kind from a distance. The rock underlying the district is a quartzose micaceous and sericitic schist, in which many lenticular stringers of quartz lie parallel to the bedding, and through which some large veins of quartz run in other directions. In a few places dikes of dark-green basic rocks as well, as lighter coloured porphyries cut through the schist, but it is not probable that these intrusives have any influence on its gold-bearing character.

"On Bonanza and Eldorado creeks, one band of the schists is highly graphitic, while near the mouth of Hunker Creek there is a heavy band of granular limestone.

"Granite was reported to occur a short distance up the Klondike but the outcrop was not seen.

Age of auriferous schists.

"The schists are sedimentary or crushed massive volcanic rocks of early Palæozoic, probably Cambrian age, which have been highly altered by dynamic agencies, the quartz veins having doubtless been formed in them while they were undergoing this metamorphism.

"The rocks of this group have been traced northward and westward by the geologists of the United States Geological Survey into the Forty-mile and Sixty-mile district. Southward they have not as yet been exactly correlated with any of the rocks known to occur in Canada, though they may be of the same age as the schists and limestones on Nisling River and along other portions of the Dalton Trail.

Gold associated with quartz.

"That the gold in its original habitat has been associated with quartz there can be no doubt, for many masses of gold-bearing quartz have been found, and many of the nuggets of gold contain particles of quartz. Whether the gold is chiefly derived from the heavy veins or from the narrow stringers has not yet been determined, but it is

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probable that in places both are auriferous. We found particles of gold in a thick quartz vein north of Eldorado Creek, but as the abundance or scarcity of the placer gold did not appear to depend on the size or number of these heavy veins, it is probable that the precious metal has been chiefly derived from the narrow stringers or leaves of quartz interbedded in the schist.

“The great ice-sheet of the Glacial period which covered much of British Columbia, did not reach as far north as the Klondike district, so that ever since the land was elevated above the sea, perhaps in the Miocene or Pliocene epoch, it has been cut down continuously by atmospheric and stream agencies forming deep valleys, with intervening rounded hills still covered by a varying thickness of decomposed rock. There is no doubt that much of this decomposed rock, in the Klondike area, contains a small amount of gold, and by constant washing for ages, much of this has become concentrated in the beds of the streams. On Bonanza and Eldorado creeks, and doubtless also on a number of the other creeks that rise in the high land near the Dome, the work of concentration has been greatly expedited by small local glaciers, which, at a period not very remote, have originated at the heads of these creeks, and have filled the bottoms of their valleys through parts at least of their lengths. Thus the Eldorado glacier would appear to have had a greatest thickness of about 200 feet at French Gulch, and to have joined the Bonanza glacier at the Forks, below which both continued on some distance together. The gravel that fills the bottom of the valley from side to side is a typical glacier-wash, having been deposited by the stream which flowed from the face of the glacier. The lower benches on Bonanza Creek were also deposited in a similar way, but the higher so-called benches, have been formed either as lateral moraines along the sides of the glacier, or by streams which flowed between the side of the glacier and the bounding slope of the valley.

District not glaciated.

Small local glaciers.

“The great richness of the Klondike placer ground depends, therefore, first, on the presence of a highly gold-bearing rock, and, secondly, on the occurrence of a set of conditions peculiarly favourable to the concentration of the precious metal.

“*Communication.*—Last summer it was necessary to transport provisions and supplies from Dawson to the various creeks on the backs of men or horses by trails through swamps, and along stony hill-sides which were about as bad as they could be. Good wagon-roads could, however, readily be built from Dawson up the various creeks tributary to the Klondike River and thence possibly across to Dominion Creek, and thus to the tributaries of Indian River. From the Yukon River a good wagon-road could in all probability be easily built from the mouth

Insufficient means of transport.

of Indian River up to the very sources of most of the tributaries. In fact, good and direct roads could easily be built through that whole country, for the hill-slopes are everywhere light and the bogs in the bottoms of the valleys are nowhere very deep, while lakes are conspicuously absent.

Wood supply. “*Fuel.*—The country is more or less thickly wooded with white and black spruce, white and black poplar, and canoe birch. The largest timber is in the bottom of the valleys, some of the white spruce on the flat near the mouth of Bonanza Creek forming a forest of fine tall trees fourteen to eighteen inches in diameter. Excellent timber also extends in places up the sides of the hills to a height of several hundred feet above the level of the Yukon at Dawson, the spruce being mixed with large white poplars. At higher elevations the forest becomes thinner and the trees smaller, until at an elevation of about 2500 feet above Dawson, the timber limit is reached, the higher crests and summits in the vicinity of the Dome being devoid of timber and clothed only with small hardy alpine and arctic plants. If used with reasonable care, there is an abundance of wood in the country to supply the wants of the people for a number of years both in fuel and building timber. The greatest care, however, should be exercised to prevent forest fires which might in a very short time deprive those who are attempting to develop the resources of that country of one of their most valuable assets.

Coal. “Lignitic coal or lignite is reported to have been found on Klondike River about forty miles above Dawson, but no definite information has been obtained about it. It is possible that there may be coal seams here which will furnish a valuable local supply of fuel.

Expenses. “*Cost of living.*—During the past year the expenses of working mines have been abnormally high on account of the scarcity of labour, and the very high prices of machinery and provisions, these prices being due not so much to the inherent difficulty and expense of transporting provisions into the country as to the fact that the means of transport into the country were quite inadequate to supply the people who swarmed into the Yukon district. This summer, however, wages had fallen to about a half of what was paid last winter, and it was found quite possible to purchase provisions at retail prices at the stores, for the maintenance of a party, at less than a dollar a day per man.”

#### BRITISH COLUMBIA.

Mr. R. W. Brock, during the early part of the year, was employed chiefly in work connected with the compilation of the West Kootenay



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map. Accompanied by Mr. W. W. Leach as topographical assistant, he left for West Kootenay on May 30th, to continue and extend the field-work necessary for the completion of the map-sheet laid out, which embraces a block of country extending from the 49th parallel northward nearly to the head of Kootenay Lake, bounded on the east by a line east of Kootenay Lake and to the west by a line west of Christina Lake. This map will therefore include the mining centres of Trail Creek, Nelson, Slocan, Ainsworth, Kaslo and several others, besides a portion of the Boundary Creek district.

The portion of the map already completed, has been engraved on copper during the past summer, and when the additions due to last season's work have been made, it may prove to be desirable to print a preliminary edition of the map-sheet, although the completion of its whole area involves much further surveying work. The very rough and mountainous character of the country, renders it exceptionally difficult, and it must be remembered that the whole work of its topographical survey, as well as that of its geological examination, has had to be undertaken by the Geological Survey.

Mr. Brock reports as follows on the work of 1898 :—

“ Attention was confined chiefly to that portion of the district which lies between the Columbia River and the Slocan and is bounded by the Nakusp and the Kootenay to the north and south. While the weather was unfavourable for work in this our main field of operation, a transit and micrometer survey was completed of the Arrow Lakes and the Columbia River, from the point, about five miles below Halcyon Hot Springs on Upper Arrow Lake, where the Dominion Lands Survey of the Columbia had been discontinued, to the International boundary at Waneta. In addition to this, a week was spent in the Beaver Mountains, situated between the Salmon, Pend d'Oreille and Beaver rivers, and, after the depth of snow on the mountains generally had rendered ordinary field-work impossible, I visited some of the principal mines in the Slocan district, with the view of collecting a representative suite of specimens of the typical ores of the district. District examined.

“ The season was altogether unfavourable for mountain work, and we were, in consequence, unable to finish the Slocan slope of the district. On account of the late spring and the altitude of the mountains, the work was interfered with, first by snow, then by rains until well on in July. About the middle of August the smoke due to forest fires put an end, for the time being, to the topographical work in the mountains. It was then that the survey was made of the Columbia River and the Beaver Mountains. The smoke enveloped the moun-

tains until the latter part of September when it was dispelled by falls of snow.

Method of survey.

“The method adopted in carrying out the topographic work, was that followed in previous seasons, viz., transit triangulation, with sketches, from peak to peak, together with traverses of intervening and connecting trails, ridges and valleys. The framework thus constructed was connected with the work already done, by bearings on fixed points and also by tying in with Robson and with Nakusp Point, the positions of which had been already determined astronomically. The survey of the Columbia furnished additional data for this connection.

Topographical features.

“The character of the country examined is, like that of other portions of the West Kootenay district, mountainous in the extreme. Its special features are the steepness and altitude of its mountains and the narrowness and depth of its valleys. Only in a few places do even the main valleys, such as that of the Columbia and Pass Creek, widen, and for short distances present open expanses or meadows. It consists essentially of a block of mountains, which, rising steeply from the Columbia valley on the one side and abruptly from the Slocan on the other to a height of 7000 or 8000 feet, gradually increase in altitude towards the interior till they culminate in the Valhalla Range, a group of wild and rugged, glacier-bearing peaks.

Drainage.

“In the extreme south, the mountains are massive domes. Throughout all the central part they are lofty precipitous crags, of airy and fantastic form, supporting numerous glaciers and perennial snow-fields. In the north, on parts of Snow and Cariboo creeks, the mountains, while still high and steep, are often drift-covered and grass-grown, giving them a less rugged and more pleasing aspect. This is true particularly of the southern slopes, for, as a rule, throughout the district, the southern side of the mountains are steep, debris-covered slopes while the northern present bold, precipitous faces.

“The main drainage is by the short torrential streams that occupy the narrow deep-cut transverse valleys, heading usually in amphitheatres or cirques carved in the central range of peaks. The actual watershed between the Columbia and Slocan is sinuous, being close to the Slocan valley in the north, but soon sweeping over toward the Columbia and so on southward. It rarely drops below 7000 feet in height. The longest and most important transverse valleys on the Columbia slope, are those of McDonald, Cariboo, Snow and Long creeks in the north, and of Deer and Cayuse creeks and Pass valley in the south. The latter, paralleling the Kootenay and separated from it only by the wall of Sentinel Mountain, affords a very low, easy pass from the Columbia to the Slocan valley

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near its debouchment on the Kootenay. Pass Creek, coming in from the north about the middle of this valley, now turns southward to the Columbia. Formerly it appears to have taken the opposite course, discharging into the Slocan.

“While transverse valleys predominate, there are within the district two notable longitudinal valleys; one, the southward continuation of the valley occupied successively by Musquito Creek and the Columbia River above Burton City, is drained by Trout Creek, and the other, cut off from this by a spur from the Valhalla Range, but continuing the depression on southward in the same direction, is that of the Little Slocan. This stream drains a considerable area, receiving a large number of the transverse valleys on the Slocan slope in the central and southern portion of the district. Tarns and small lakes are numerous in the upper parts of the streams, being almost invariably found in the cirques at their heads, and occupying shelves of rock near the crests of the mountains. These little lakes, in the higher mountains remain frozen over almost the entire summer. In the Valhalla Range the multitudinous lakelets have the beautiful peacock-blue or green water peculiar to glacier-fed lakes. Lower down in the courses of the streams, lakes may also be found, formed by avalanches or moraines damming their valleys. Lakes of some size occur on Little Slocan, and one or two other streams. The Arrow and Slocan lakes have been described in previous reports of this Survey.

“The forest growth is similar to that found in other portions of West Kootenay, also described in previous publications.\* On the Columbia slope are a number of park-like expanses with a considerable growth of red pine (*Pinus ponderosa*).

“With the exception of parts of the Cariboo and Snow Creek basins and a small area in the vicinity of Deer Park, the country examined may be said to be composed of granite. A number of different varieties of granite belonging to several distinct periods are represented.† Owing to the intricate manner in which they cut through each other, to the number of *facies* presented, and to the deformation to which in places they have been subjected, their separation and delimitation is often difficult if not impossible.

“One of the commonest and most easily recognized rocks is the gray hornblende-biotite-granite, often characterized by large porphyritic crystals of felspar. This is the same granite as that typically devel-

\* A list of the principal trees is given in the Summary Report for 1896. Further information may be found in the Annual Report, 1888-89, vol. IV. (N.S.), part B.

† These rocks vary considerably in composition, texture and structure, but for convenience will here be referred to as granites.

oped at Nelson and so many other west Kootenay points. It has already been described as newer than the stratified rocks there and also newer than the porphyrites. While in places the rock is uniform in grain, and phenocrysts are not observable, in others the feldspar is porphyritic, sometimes on a very large scale, the crystals being from six to eight inches in length. When such large feldspars, in perfect interpenetrating Carlsbad twins, stand chiselled out by surface weathering, this is a striking rock. When mechanically deformed, it becomes a typical augen-gneiss, and when its crushing has proceeded further it becomes a fine-grained, old looking gneiss that shows very little resemblance to the unaltered porphyritic granite. Such a gneiss is to be found near Robson.

Its extent.

“This granite extends from Robson to Cayuse Creek. A spur runs on through Deer Park and beyond, and along the Slocan watershed it extends north of the head of Deer Creek. An exposure of it was also seen on the lake, five miles above Deer Park, and a band several miles wide extends along the Lower Arrow Lake from Long Creek to the north edge of the area of the map-sheet. At the head of Snow Creek and in the Valhalla Mountains, some isolated patches were noted.

Younger granite.

“Another rock that is frequently met with is a younger granite, characterized by the colour of its feldspars, which are usually pinkish, reddish or brownish. This is also a biotite-hornblende rock that varies considerably in composition and structure. Intimately associated with this granite, so closely as often to be almost undistinguishable from it, is a still younger rock which shows a wider range of differentiation. Followed towards a contact, this rock acquires the structure of a porphyry, and along the border has a compact cryptocrystalline ground-mass with phenocrysts of pink feldspar embedded in it.

“These ‘red granites’ are extensively developed along the summit range. They also extend along Lower Arrow Lake from Deer Park to Long Creek. Dykes from them are very numerous in the older rocks.

Acidic granite

“At the head of Snow Creek and in the Valhalla Mountains, is an acidic granite, with feldspar usually white or light-pink in colour. Quartz is usually abundant in the rock, while the bisilicates are only sparsely found, though some garnets are developed in it. It is usually fine-grained, non-porphyritic, with frequently-occurring pegmatitic *facies*. It is extensively cut by dykes of a pegmatite that contains muscovite, tourmaline and garnet. The pegmatite extends out from the parent mass and cuts the older rocks in the neighbourhood in the form of dykes. This granite is younger than the gray porphyritic granite. A rock that resembles it and which may prove to be the same, is

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found on the Slocan slope, three miles east of the head of Deer Creek. It also contains muscovite-bearing pegmatites, and it is of course also younger than the gray granite.

“The relationship between these and the red granite was not clearly seen. Further study may show them to be closely connected with, if they are not parts of, the same eruption.

“Behind Robson and up Pass Creek, the granites contain bands <sup>Gneiss.</sup> and lenticular and irregular inclusions of gneiss. This gneiss is a fine-grained, old looking, often rusty rock, with acid and basic bands. The inclusions lie irregularly in the granite, their banding being often discordant with the gneissose structure of the granite. In the basic inclusions dykes of granite and pegmatite are pulled apart, broken and balled, giving it a pseudo-conglomeratic appearance. It is not known whether these gneisses represent inclusions of the old Shuswap gneisses or of the oldest granite of the Kootenay which is so closely associated with the Shuswap series. Detailed study may make it possible to further subdivide the granites of the district.

“All the granites are cut to a greater or less extent by dykes of the basic rock, which constitutes the latest observed eruption of the West Kootenay district.

“In the vicinity of Deer Park, the granites are replaced by sedimentary rocks, and by older and more basic eruptives, which appear to be augite-porphyrates and perhaps other greenstones. <sup>Sedimentary rocks.</sup> These rocks extend more or less continuously along the lake, from five miles up Cayuse Creek to a point about five miles above Deer Park. They are sometimes almost completely cut off by the granites, but re-appear at intervals between the points mentioned. The sedimentary rocks included in this area consist of crystalline limestones, phyllites and allied schists probably equivalent to Dr. Dawson's Nisconlith series (classified as Lowest Cambrian). These rocks are found close to and behind Deer Park. The limestones, which have the greatest areal distribution, extend in a band from two miles up Little Cayuse Creek to the lower Arrow Lake at Little Deer Park.

“The largest inclusions in the granites of this district, of other igneous and of sedimentary rocks, are on the upper portions of Cariboo, Snow and Trout creeks, behind Burton city. <sup>Inclusions in granites.</sup> These rocks consist of mica-schists, grey gneisses and limestones, that may be referred to the Shuswap series; of dark argillites and phyllites of the Nisconlith series; and of dark banded calcareous and siliceous rocks similar to the Slocan slates of the Sandon region. These rocks are cut by old eruptives, some of which are altered so as to be only with difficulty dis-

tinguishable from the Shuswap rocks. They are also cut by the granites and by the recent basic dykes. On account of the way in which the granite cuts into them, their actual boundary often cannot be determined. This is especially true of the Shuswap gneisses in the south and west, where they extend as innumerable little patches into the granite of the Valhalla Mountains.

East side of  
Upper Arrow  
Lake.

"The rocks on the east shore of Upper Arrow Lake are described by Dr. Dawson in the Annual Report for 1888-89, Vol. IV. (N.S.) p. 36 B. On the west side of the lake from the Halcyon Springs south the rocks are similar. To about opposite Cape Horn, the rocks are the glossy mica-schists, gneisses and interbanded limestones of the Shuswap series. From this point south they are mostly the dark Nisconlith argillites with numerous and large quartz veins. These rocks are much compressed, being in places folded into pitching anticlinoria and synclinoria. Some green and grey sheared rocks were also observed which may correspond to the Adams Lake series.

Glacial  
phenomena.

"In addition to the scoring and polishing of the rocks due to the agency of local glaciers, and the moraines which mark successive stages in the retreat of these toward the higher peaks, evidences of glaciation due to the great Cordilleran glacier are found at various places throughout the entire district. The striking features connected with these are the high altitudes at which they are found, and, notwithstanding the disturbing influences of the Valhalla Mountains and of the adjacent low Columbia and Slocan valleys, their general persistency in direction. The general direction of this striation is about S. 30° E., but local topography may influence it to some extent.

"Terraces of silts and gravels were observed at various places all along the Columbia slope from Burton City to Robson. While a few were seen above 4000 feet, more occurred in the neighbourhood of 3000 feet, and by far the greater number lay between 2500 feet and the present lake-level. One of the best marked and most persistent, which indicates rather a prolonged break in the gradual recession of the waters in which these silts were laid down, is found about five hundred to six hundred feet above the present level of the Arrow Lakes and Columbia or just about the elevation of the old wide valley of the Columbia. The general movements indicated by these and other phenomena, may account for some of the later faulting by which the mineral deposits have been disturbed.

Ore deposits.

"Portions of the district examined have been fairly well prospected, and many claims have been staked. But, although the surface indications in some instances are quite promising, little or no develop-

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ment work of such a kind as to prove the extent and value of the ore-bodies, has as yet been carried out in this particular portion of the Kootenay district. The economic minerals have been found in veins in all the older rocks, from the gneisses and schists to the red granite. Wherever observed, the mode of origin of the deposits seems to have been the same. They occur in sheeted zones or bands of fracture in the country-rock, in the neighbourhood of white 'porphyry' dykes, with which they appear to be closely related. They are sometimes found along the edges of these dykes. It is probable that they were formed by hot mineral-bearing solutions which attended the close of that period of volcanic activity that resulted in the injection of the white dykes into the country-rock. These solutions, finding their way along the contacts in some cases, but more usually following the fissured zones in the country-rock as channels, percolated through it, and, meeting with changed conditions of temperature and pressure, deposited their load of vein-matter and metallic sulphides, replacing with this material the original country-rock. From the character of the deposits, it is to be inferred that they would be greatest where the nature of the rock afforded the readiest access to the mineralizing solutions. The lines of fracture being very irregular and very numerous, the mineralizing agent did not confine itself to any one or to the same ones. Sometimes the blocks of rock between fractures were entirely replaced by ore, sometimes they remain as 'horseshoes' in the leads. The ore-deposits are consequently very irregular and cannot be said to have any confining walls; so that if any rule is to be applied to their exploitation, it is to follow ore. Earth-movements subsequent to their formation have caused faults and dislocations. While these are of various kinds, the amount of displacement is usually not great, and a careful study of the ground will generally reveal the direction of the slip. The character of the ore varies somewhat with the locality, but it usually consists of the minerals pyrrhotite, galenite, sphalerite, pyrite and chalcopyrite. In the Burton Camp some fahlore occurs in addition, and, it is stated, some tellurides.

"At Deer Park, during the season, development work was in progress on the Blue Bird, and on two or three other properties. Development  
at Deer Park.

"On the Aaron's Rod, two and a-half miles back from the Needles, Lower Arrow Lake, a tunnel is being driven. At the time of visit it was 390 feet long.

"In the Burton City camp, several properties were active. A compressor was being installed at the Silver Queen in connection with the testing and opening up that property. Work was being continued at the Golden Hope, where a small force has been at work during the past Burton City  
camp.

year. The main working is a tunnel 225 feet long. On the Millie Mac a force of men was engaged making preparations for active development.

'Big ledge.

"An extensive deposit of sulphides known as the 'big ledge' occurs six miles back from the Upper Arrow Lake, opposite the Halcyon Springs. As no assay has as yet been made, it is not known if this deposit has an economic value. A tunnel six feet wide and twenty feet long on Walcott and Skea's claim, lay in solid sulphides consisting of pyrite, pyrrhotite, galenite, sphalerite and chalcopyrite. On the surface the ore is weathered to gooson or 'iron-cap' to a depth of three or four feet. As the surface is covered, and time could not be given to it, the extent of the deposit was not ascertained. Nineteen claims, all supposed to cover this lead, have been staked out.

"The main work of the season, as already noted, rendered it impossible to devote time to the examination of the mines actually in operation in different parts of West Kootenay, with the exception of those of the Slocan region, but a few notes on the latter, resulting from personal observations, may be of interest.

Slocan district.

"The past year has proved to be a prosperous one in the Slocan district, contrary to expectations in the early part of the season, when the Klondike excitement, together with depressed markets, threatened to retard its development. Increases in the prices of silver and lead had a stimulating effect, so that at the time of my visit, substantial if unostentatious progress was steadily being made. The development work, both in the prospects and mines, has proved very encouraging. That in the lower workings of the large mines has been particularly reassuring to those who entertained misgivings as to the permanency of the Slocan leads, for the depth gained on the Payne, Last Chance and other properties has exposed large bodies of high-grade ore, and has demonstrated the continuancy of the ore-bodies. This permanency was to be expected, such producers as the Ruth, Slocan Star and others, at comparatively low altitudes, showing that mineralization on a grand scale extended to horizons well down toward the bottoms of the valleys. That the majority of the best known mines should be located near the crests of the mountains, is to be accounted for by the fact that prospecting is there remarkably facilitated by the absence of superficial deposits and forest vegetation.

Mines at Sandon.

"The Payne has maintained or increased its large and steady shipments of ore, and its payment of excellent dividends. The lowest workings are now 700 or 800 feet below the upper tunnel, and the longest tunnel is about 1200 feet. The Ruth, which passed last year



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into the control of an English company, has, under the new management, taken a place second only to the Payne as a producer. The Slocan Star is working steadily, maintaining its reputation as a dividend payer. Concentrating ore was being taken out at the time of my visit, but a large quantity of clean ore was blocked out ready for mining during the winter months, when lack of water makes it advisable to shut down the concentrator.

“At the Last Chance, some shipping was in progress, but until the tramway shall be completed, development work is that which is chiefly receiving attention. Large quantities of high-grade ore are ready to be taken out, and it is expected that as soon as the facilities for shipping are perfected this mine will rank with the heaviest producers.

“On the Noble Five, under the new management, attention has also been turned to development. This appears to be progressing favourably, and it may be expected that regular shipments from this property will soon be resumed. The Wonderful, Sovereign, Treasure Vault, Ajax and numerous other properties in the vicinity of Sandon have also produced more or less ore.

“In the Idaho Basin, the larger mines are working vigorously. The Queen Bess, now owned by the Queen Bess Proprietary Company, Mines on Howson Creek. England, has become one of the heavy shippers. The Idaho-Alamo group continues to turn out large quantities of ore. Very high grade ore is being mined in the Idaho, some of it containing a large percentage of native silver.

“Other mines besides these mentioned, in this and other parts of General progress. the district, are making favourable progress. The development work on a number of the prospects makes it probable that additions will be made to the list of shipping mines, and a number of new locations of considerable promise are recorded, so that, at present, the mining status of the Slocan is regarded as more satisfactory than at any previous time in its history.”

### NORTHERN ALBERTA.

*(With adjacent parts of British Columbia.)*

Mr. J. McEvoy was engaged during the early part of the year in Work by Mr. J. McEvoy. the construction of a topographical contoured map of a portion of the West Kootenay district, B.C., from surveys made during the previous summer.

Route through  
Yellow Head  
Pass.

Upon his exploration of the past season from Edmonton westward through the Yellow Head Pass to the Fraser and Canoe rivers, he reports as follows:—

Previous  
explorations.

“ In the region surveyed during the last season, explorations had previously been made by Dr. (now Sir James) Hector, in connection with Captain Palliser’s exploration of British North America, who, in 1859, travelled from Edmonton westward to the Athabasca River, which he ascended for some distance above Henry house. Several reconnaissance expeditions by the government surveyors engaged in examining lines for the Canadian Pacific Railway, were afterwards made along this route, and a final location survey was completed in 1876.

“ Leaving Ottawa on the 24th of May and arriving in Edmonton on the 1st of June, the necessary supplies were obtained and the journey westward commenced on the 7th of June. The party consisted of: Wm. Spreadborough, (who, besides attending to other duties, made a collection of plants); with F. A. Jackson and S. Derr, as packers. Besides the above-mentioned, Mr. R. G. Hardisty was engaged to transport the bulk of the supplies as far as Henry house.

Lake St. Ann.

“ A wagon-road leads through a good farming country as far as Lake St. Ann, crossing and recrossing the Sturgeon River several times on the way. Lake St. Ann is shallow, about three and a-half miles wide and eight miles long, to the Narrows, north of which it is reported to widen out again to a still larger body. At the Hudson’s Bay post there, in charge of Mr. Taylor, to whom I am indebted for courteous assistance, the arrangement of packs was completed and a full complement of horses was secured.

“ Leaving Lake St. Ann on the 11th of June and travelling south-westward *via* Island Lake, the Pembina River was reached on the 13th. At Island Lake is Pierre Grey’s trading-post, the farthest outlying settlement on the route that is permanently occupied, with the exception of Swift’s at Henry house.

Pembina  
River coal  
beds.

“ The Pembina River is about eighty yards wide, and at the time of our visit was quite shallow and easily fordable. Earlier in the spring or during a rainy season, it is so deep as to necessitate swimming horses. Several outcrops of coal occur on the banks of the river, principally above the crossing. The coal has been on fire here years ago, and the overlying beds of clay and shale have fallen in, giving a very disturbed appearance to the locality. The white clay is partly burned to a pale red terra cotta. Half a mile above the crossing, on the east side, a seam of coal 17 feet 10 inches thick is exposed, of which the upper four feet is impure. On the opposite side there is a seam

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13 feet thick, having four small partings of clay and carbonaceous shale, amounting in all to nine inches. Two small seams separated by carbonaceous shale and clay overlie this.

"The valley of the Pembina is 250 to 300 feet below the level of the surrounding country and gives evidence of a greater amount of erosion than would be expected from the volume of water. A possible explanation of this will be given later, based upon what was seen at the mountains near its source.

Erosion of  
Pembina  
valley.

"Beyond the Pembina, the route ascends quickly to the level of the surrounding country, which, away from the immediate vicinity of the streams is flat, and it continues westward, crossing the Lobstick River, a tributary of the Pembina locally known as Buffalo-dung River, at a point where its valley is only fifty feet deep. Further westward, the route crosses a gradually rising country that slopes gently northward toward the Lobstick River. The small tributary streams make very little impression on the surface, and no rock-exposures are to be found, in fact none were seen all the way from the Pembina to the McLeod River. The characteristics of the route are, thick small timber, the greater part of which has been killed by fire, and windfall, frequent bog-holes and deep sticky mud with several bad muskegs. As few persons who travel this way ever cut a stick if they can get around or jump over it, it can readily be understood that, especially in a wet season, the so-called trail is all but impassable. The old trail made in connection with the government railway explorations of 1874-76, is still distinguishable in places but is of little service. The corduroy laid down at that time across the muskegs and swamps is now in such a bad state of preservation as to be unsafe for animals.

Pembina  
River to Mc-  
Leod River.

"Before reaching the McLeod River, two of its tributaries, Wolf Creek and Moose Creek were crossed. The former is a considerable stream heading with a branch of the Pembina River. Between these two streams the trail runs along a sand-ridge trending N. 65° W.,\* nearly two miles in length, bending toward its western end to S. 70° W., with several spurs turning off N. 55° E. The width of the ridge is fifteen to thirty yards, its height five to forty feet and the elevation above sea about 2900 feet.

Two and a-half miles beyond Moose Creek, the McLeod River was reached and crossed. It is 110 yards wide and at that time (June 19th) not more than two feet deep at the ford; although the volume of water is far greater than that of the Pembina its valley is comparatively shallow, being only 90 to 100 feet deep.

McLeod  
River.

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\* Bearings refer to the true meridian, but it must be understood that both bearings and distances are here given subject to correction.

“ Following the north bank of the McLeod, the Big Eddy is reached in seven miles. Here the river takes a semicircular bend to the south, while the trail, continuing westward, joins it again at White Mud Creek, a distance of ten miles. A large tributary called by the Indians, Stick River, which rises near the base of the mountains, joins the McLeod at the southern point of this bend. From White Mud Creek, the trail follows the river thirteen and a-half miles further, to a point formerly known as Plum Pudding Cache, now called the Leavings. Rock exposures are not frequent on this part of the McLeod, but where seen consist of coarse, gray and yellowish-gray sandstones, clayey sandstones, false-bedded, carbonaceous shale and small seams of lignite. They are of Laramie age and probably represent the lower division of that series.

McLeod-  
Athabasca  
watershed.

“ At the Leavings the river bends southward, while the trail continuing to the west crosses the watershed to the Athabasca River. This watershed is a slightly rolling country, rising gently to a height of 940 feet above the McLeod or 1340 feet above the Athabasca. In a straight line, the distance between the rivers is only about ten miles. The trail, however, turns south-westward from the summit and reaches the Athabasca at a point twenty miles distant from the Leavings of the McLeod. All this country has been overrun by fire a few years ago and much of the timber destroyed was of merchantable size.

Climate.

“ The climate of the country so far passed over, is decidedly wet, but as the bottom of the Athabasca valley is approached evidences of a change become apparent, such as smaller and more scattered timber, steeper slopes on the side-hills and cut-banks of streams, and a marked difference in the vegetation. The difference is more noticeable farther up the river, and is most pronounced from Jasper house to Henry house.

Lower  
Laramie  
fossils.

“ Near the mouth of the small stream named Sandstone Creek, down which the trail descends to the Athabasca, in an exposure of gray and carbonaceous shales, and gray and yellowish sandstones, some fossils were obtained. Mr. Whiteaves, in a preliminary examination of these, finds that they correspond with the fossils found elsewhere in the Lower Laramie rocks.

“ Four miles farther up the Athabasca, at a place known as Ne-kas-pekwat (corrupted into Cache Pecotte), a branch route turns northward, crossing the river and leading to the Smoky River. This part of the Athabasca valley is, to a great extent, an open grass country, with some light, second-growth timber. The slope of the south-west side of the valley is very gentle, and at a distance of a mile back the

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elevation is not more than a hundred feet above the river. The same characteristics continue up to Prairie Creek, a distance of five miles further. Here the first evidence of the disturbance connected with the uplift of the mountains is seen. Greenish sandstones interbedded with black shales, etc., holding small, irregular seams of lignite, are found, striking N. 80° W., and dipping to north and south at angles of 70° to vertical. These rocks may represent the Pierre shales and Fox Hill sandstones.

Pierre shales  
and Fox Hill  
sandstones.

“As yet there is no approach to a mountainous condition, as notwithstanding the evidence of great folding in the rocks, the hills in the vicinity of the river nowhere rise more than 400 or 500 feet.

“Just above the mouth of Prairie Creek, the river bends to the westward for a distance of eight miles, where it issues from Brulé Lake. This lake is an enlargement of the river about seven miles long and half a mile to a mile in width. The trail does not follow this detour of the river, but ascends Prairie Creek nine miles, then turns south-westward across Drystone Creek to Fiddle Creek, which flows into the Athabasca at the head of Brulé Lake.

Limestones.

“As Prairie Creek is ascended, the ridges that run at right angles to its course become more elevated, and between Prairie Creek and Drystone Creek rises the first foot-hill of the Rockies. The limestones make their appearance here to the north-eastward for the first time, in a sharply folded anticline, slightly overturned. On the opposite side of the river, in Bullrush Mountain, the limestones have apparently been similarly folded, but afterwards disturbed and broken by a thrust from the south, resulting in at least two lines of fault. The principal rocks here are fine-grained gray and bluish limestones, and with these are associated thin-bedded yellowish-weathering siliceous and calcareous shales, dark flaggy limestone and carbonaceous shale.

“It would be inadvisable in this preliminary report to make any statements in detail as to the age of these rocks, as the season's work has not yet been plotted, nor have the fossils been critically examined. There is, however, a great thickness of rocks exposed in the Athabasca valley, comprising blue and gray limestones, magnesian limestones, frequently unequally hardened and holding cherty layers, quartzites more or less dolomitic in parts, with some yellow shale and carbonaceous shale. Carboniferous and Devonian beds are represented and also, probably, some Cambrian rocks corresponding to the Castle Mountain Group of Mr. McConnell. The rocks occurring in the first foot-hill mentioned above, very probably represent the Banff Limestones.

Formations  
represented.

“From this point upward, high, rugged mountains stand up boldly on each side of the valley, with vertical cliffs and steep talus-slopes,

leaving a flat-bottomed valley one to two miles wide through which the Athabasca winds, seldom in one united stream but lost in a network of sloughs. The most notable feature is Roche Miette, a bare rock promontory with a vertical face, standing on the east side of the valley just below Jasper Lake. The timber-line is low, trees being seldom found above 6000 and frequently dying out at 5500 feet, the limit in each case being largely determined by the sheltered or exposed nature of the situation. The general aspect of the mountains is ragged and barren, the slopes being too steep in most parts to support a growth of trees.

“The strike of the rocks is from S. 60° E. to S. 70° E., and the confluent streams having the same direction are generally arranged in pairs, each pair occupying one continuous valley, crossing the main valley approximately at right angles. A notable example of this is found in the case of Rocky and Stony rivers (the latter originally Snake Indian River), which join the Athabasca near the site of Jasper house at the foot of Jasper Lake.

“Rocky River, where crossed near the mouth, is divided into ten separate channels and was barely fordable at the time. Jasper Lake is about six miles long and a mile in width. Its eastern shore is formed by a narrow sand-ridge, thirty feet high and fifty yards to a quarter of a mile in width. On the other side of the ridge and extending to the base of the hills are two smaller bodies of water known as Fish Lakes. The present form of this ridge is entirely due to the action of the wind, drifting up the fine silty sand from the beach and dropping in on the top. The same action is going on along the banks of the river higher up the valley and was also noticed on the east shore of Brulé Lake.

“Several springs of sulphuretted water occur in this part of the valley, the largest seen being on the east side about three miles above Jasper Lake. A stream of cold bluish-green water, three feet wide and four inches deep, smelling very strongly of sulphuretted hydrogen, comes from under the dolomite rocks, leaving a deposit of native sulphur in its channel.

“A few miles above Jasper Lake, the Athabasca bends slightly towards the east, and continues in that direction to the site of Henry house, receiving the waters of Snaring River from the west on the way. At Henry house the Maligne River flows in from the east. It is a swift stream, fordable only at very low water, and possesses no remarkable features for the first mile and a-half above its mouth. It then comes from a narrow winding gorge fifty to a hundred feet deep and fifteen to thirty feet wide. The rocky walls of this chasm have partly

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closed over and in places are almost touching, boulders lodged in the crevice preventing them from closing altogether. This is partly due to a fracture in the rocks at one side. On reaching the level of the valley above the gorge, 350 feet above the Athabasca River, it is seen that the volume of the stream is only about one-eighth of that below, and it is evident that the main supply of water comes through underground passages.

“Mr. Hardisty set out on his return to Edmonton on the 4th of July with the twelve hired horses. The remainder, with all the outfit, were across the Athabasca on the 5th. The river is swift and narrow at the crossing place, just below the mouth of Maligne River. About half the provisions were stored at Mr. Swift's cabin on the west side, two miles and a half below the crossing, and the westward journey was resumed on the 7th. Cross the Athabasca.

“Three-quarters of a mile above Henry house, the Devono-Carboniferous limestones are cut off by a fault, and notwithstanding the great thickness of these rocks no trace of them was found on the route west of this. The rocks brought into contact with the limestones by this fault, are hard, fine-grained conglomerates or coarse quartzitic sandstones. Some of these conglomerates hold pebbles up to half an inch in diameter of pinkish, milky, and semi-transparent quartz, the whole very closely resembling the conglomerates of the Bow River series. Faulted contact with Bow River series. Associated with these conglomerates and underlying them, a short distance to the south, on the Miette River, are fine-grained conglomerates which have been squeezed out to a schist, with a great development of fine pale mica. Interbedded with these are fine-grained gray and greenish-gray schists with thin slaty cleavage. The course of the Miette River, which comes from the Yellow Head Pass and empties into the Athabasca five miles above the Maligne, follows approximately the summit of a broken, anticlinal fold of these rocks.

“Ascending the Miette River, the trail follows the rocky ridges Miette River. near the stream and through windfalls of small dead pines for a couple of miles, then descending to the river-flat, it crosses the stream four times in a distance of three miles, in order to avoid steep rocky banks. The animals have to swim at the lower ford, except at low stages of the water. Ten miles up, the river-bottom widens and the stream takes a winding course through marshes and meadows half a mile and more in width. The valley continues of this character to within a mile of the pass, the main water supply having in the meantime been received from the lateral valleys.

“Miette River is crossed for the last time at a point, where the channel is blocked by log jams and the stream is divided into several Yellow Head Pass.

branches running among the trees. When the last of these branches is crossed it is suddenly realized that the summit of the Yellow Head Pass has been crossed, as at high stages some of the water empties by this branch into the Fraser watershed. The elevation of the summit of the pass is 3733 feet above sea-level, according to the railway survey. It is distant eighteen miles in a straight line from, and is 400 feet above, the Athabasca River.

Valley west of  
summit

“From the summit, the route follows the bottom of the valley in a south-westerly direction, inclining gently downward to Yellow Head (or Cow-dung) Lake, distant two miles and a-half and 100 feet below the pass. Yellow Head Lake is a narrow body of water about five miles long and half a mile in width. The route follows the north-west shore, passing through a thick windfall of heavy timber on the way. A small stream, a mile in length, carries the waters of this lake into the Fraser River, which is here a large, rapid, muddy stream unfordable at this season.

Rocks seen in  
the pass.

“Throughout the pass, in the bottom of the valley, exposures continue of gray, rather fine-grained schistose conglomerate, with greenish-gray smooth schists and blackish argillites, while the mountains which stand on each side of the pass behind intervening foot-hills or ridges, show, overlying these rocks a great thickness of fine-grained gray quartzites, having below them, 150 feet or more of light-gray coarsely crystalline dolomite. A mountain on the north side of the pass was ascended to examine these rocks and to obtain topographical sketches.

Fraser River  
valley.

“The valley of the Fraser, down which the trail now proceeds, is wide and partly free of timber. The river hugs the base of the steep mountain-side to the south, leaving a gently rising slope on the north, half a mile or more in width. A few miles down, the timber becomes larger and thicker and at a distance of twelve miles from the pass the first of the recently burnt country begins. The burnt forest continues almost without interruption to Tête Jaune Cache, the greater part of it having been set on fire early this season. Fourteen miles from the pass a large stream called Grant Brook flows in from the north. It is about fifty feet wide and very swift. A mountain on the west side of this stream and north of the Fraser was visited, and showed gray quartzites, crystalline dolomite and some white crystalline limestone, with, overlying these, dark-blue flaggy limestones and yellowish and greenish-gray schists. The direction of the Fraser in this part is along the strike of the rocks. Two large tributaries come in from the south besides numerous smaller ones.



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“Moose River is three miles below Grant Brook. It is a rapid, muddy stream 150 feet wide, and fordable except at very high water. The head of Moose Lake is two miles and a-quarter below the crossing of Moose River. The lake is eight miles and a-half long, and a mile wide near the east end, narrowing gradually toward the west. Another large tributary from the south flows in near the head of the lake. Much valuable spruce timber has been destroyed by fire in this part of the valley.”

Destruction  
timber.

“The Fraser River, issuing from Moose Lake, continues its westward course, moving slowly along in a wide stream for two or three miles, when it narrows, and taking a steeper grade, hurries rapidly downward. Fourteen miles below Moose Lake, the first of two large northern tributaries, a mile and a half apart, joins the Fraser. This is a shallow stream 100 feet wide, with a moderate current flowing past the base of Robson Peak, an exceptionally grand mountain standing about five miles north of the Fraser. A rough calculation makes the height of this peak 13,500 feet above sea-level, which shows it to be the highest known point in the Rocky Mountains north of the International boundary. These streams were collectively known as the Grand Forks of the Fraser River. The western tributary, now commonly known as Swift-current River, is an erratic, turbulent stream, fed by glaciers. It may sometimes be forded without difficulty in the morning, and by evening be utterly impassable.”

Highest  
known peak in  
Rocky Mts.

“A mountain standing between these streams, shows schistose conglomerate interbedded with soft greenish-gray schist, and, near the top, layers of dark, flaggy limestone and gray and black argillite.

“A little above this point, the Fraser River changes its former direction of N. 65° W. to that of S. 60° W., and continues in the last-mentioned direction to Tête Jaune Cache, cutting obliquely across the strike of the rocks. From Swift-current River to the Cache is ten miles, and in the latter part of this distance the valley narrows noticeably, the river being confined by high gravel banks, and near the Cache, by low rocky bluffs.

“At Tête Jaune Cache, the Fraser emerges into the great valley which is the most important feature of the western mountainous country. A good description of this valley, with particular reference to another part of its length, is given by Mr. McConnell in the Annual Report for 1894 (pp. 18-19c). The bottom of the valley is here four to five miles wide and very level. Having a dry climate it is covered with only a light growth of pine trees. So well are its main characteristics preserved throughout, that here there is a striking resemblance to

Great valley  
at Tête Jaune  
Cache.

that part of it seen near Donald, on the Canadian Pacific Railway It deserves a name of more than local descriptive significance.

Cranberry  
Lake.

“ The Fraser now bends to the north-west down this valley, receiving a tributary, the McLennan River, from the south-east. The McLennan takes its rise in a shallow lake in the main valley, called Cranberry Lake, distant fifteen miles from the Fraser and having an altitude of 2622 feet, but acquires most of its water from the adjacent mountains. It is only three-quarters of a mile from Cranberry Lake to the Canoe River, which comes in from the south-west and flows down the main valley in a direction opposite to the Fraser.

Change in  
rock-series at  
the Great  
valley.

“ Seven mountains in this vicinity were visited, four on the east side and three on the west of the valley. It is evident that the valley not only marks a great division in the topography, but also forms a dividing line of geological importance. On the east side, the first rocks met with are conglomerates, now squeezed so as to assume the outward appearance of coarse mica-schist. These are overlain, near the summits, by undulating folds of black argillite and yellow schists, including beds of dark flaggy limestone, yellow, finely crystalline, dolomitic limestone and talc. The former of these probably correspond with the Bow River series, and the latter with the Castle Mountain group of Cambrian age. The western side is composed entirely of rocks not met with previously on this exploration. They consist of garnetiferous mica-schists and gneisses, with some blackish micaceous schists and light-coloured gneisses that represent a foliated granitoid rock. The garnet-mica-schist is the predominating rock. In some places it is made up almost entirely of mica and garnet. These rocks, although differing somewhat from the Shuswap series as seen further south, are pretty certainly referable to that series. They hold numerous veins of coarse pegmatite, which, besides the ordinary constituents, contain tourmaline, garnet, cyanite, beryl and apatite.

Shuswap  
series.

Bonanza mica  
mine.

“ On one of these veins the Bonanza mica claim is located, seven miles south of Tête Jaune Cache, 5300 feet above the level of the Fraser River. The vein is about fifteen feet wide, where an opening has been made, dipping S. 45° W. conformably with the country-rock. Its continuation toward the north-west is covered with talus from the mountain, while on the south-west side of the opening the original top of the deposit is seen covered by the mica-schist. At the time of our visit, Messrs. S. Winter and J. F. Smith, with a party of ten men, were engaged in taking out and cutting mica intended for shipment by pack-horses to the nearest railway point. The quartz, felspar and mica are separated into large masses, the crystals of mica being frequently eighteen inches long and eleven inches wide, and are found

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in greatest abundance near the hanging wall. It is evident that the mass was cooled at a great depth and very slowly to permit of this amount of segregation. While practically no work has been done with a view of proving the extent of the deposit, it may reasonably be expected, from what actually appears, that a large quantity of mica can be obtained here. The mica is a transparent muscovite with a very light-greenish cast and is otherwise of excellent quality. The probabilities of further important developments appear to be very favourable.

“ Another claim, owned by some Edmonton miners, is situated a few miles south-east of the Bonanza. Fifteen miles to the south-east on the mountains, near the head-waters of Canoe River, several claims have also been staked. On one of these some work is reported to have been done, exposing a deposit of marketable mica. It may be expected that further discoveries of valuable mica deposits will be made in these rocks, which are of the same character for a distance of twenty miles at least, and probably much further.

“ A great hindrance to the development of this or any other mining industry in this part of the country, is the difficulty of travelling without proper trails. It requires seventeen to twenty days to reach Tête Jaune Cache from Kamloops, a distance of 215 miles, in the present state of the trail. From Edmonton to the Cache, a distance of about 350 miles, requires ordinarily twenty-five days, but in a very favourable season the distance might be covered in twenty days. It will thus be seen that, apart from the question of shipping out the products of the mines, the greater part of the short season available is wasted in travelling to and fro. A moderate sum of money if properly expended on these routes, would put them in a fairly passable condition.

“ The rocks of the Shuswap series, mentioned above as occupying the south-western side of the great valley, do not carry gold, but on the other side colours can be obtained in most of the tributary streams. On the mountains about seven miles from the Cache, in the rocks before mentioned as probably corresponding to the Castle Mountain group, numerous quartz veins were observed. Where these were noted, the cleavage of the rocks dips south at high angles, while a secondary vertical cleavage or jointage runs north-and-south. The larger and more numerous quartz veins run parallel to this secondary cleavage, and have a thickness of from one to five feet, while smaller lenticular veins follow the principal cleavage. These veins show a good deal of oxidized iron-pyrites and some galena. The galena proved to be argentiferous.

Necessity of trails.

Quartz veins.

Argentiferous galena.

Gold on the  
Miette River.

“ Quartz veins are to be seen in many places along the route, all the way from this place to the Athabasca River. On the Miette River, the rocks are frequently marked with a reticulation of small veins of white quartz. Sometimes these reach a width of two feet and over, and claims have been located there from which assays of eight dollars per ton in gold are reported. Colours of gold can be obtained in several places on the Miette River. At the faulted junction of the limestones and conglomerates, near Henry house, galena was noted in a small vein.

“ On the return journey, some further work was done on the north side of the Fraser valley above Moose Lake, to ascertain the position of a band of rusty quartzite which weathers out to a brilliant red colour. Viewed from a distance, these mountains have a gorgeous appearance of red and yellow, and suggest the name of Rainbow Mountains.

“ Returning to Swift's place, near Henry house, on the 1st of September, the provisions that had been stored there two months previously were found all safe, and we were further indebted to Mr. Swift for exchanging a quantity of them for others that were more required. The next two weeks were spent in collecting fossils and in tracing out the complicated faults and folds of the rocks previously mentioned along the Athabasca River.

Jasper Lake  
to Brazeau  
River.

“ On the 14th of September, the Athabasca was again crossed, and having moved down the river as far as the head of Jasper Lake, the exploration of a route through the mountains to the head of a branch of the Brazeau River, was commenced. The route selected was one that had been travelled by the Indians many years ago, previous to the railway exploration of 1874. Ascending a small stream called Jack Creek, that flows into the Athabasca above Jasper Lake, and travelling in a direction S. 60° E. over three minor summits of 5500 to 6000 feet, the route then turns northward into the valley of Rocky River. It reaches this river at a point distant sixteen miles and a-half from its mouth in a straight line. The valley of the river is remarkably straight, following the strike of the rocks, and is shut in by high wall-like mountains on each side. At a distance of fifteen and a-half miles further up, the river forks, the greater part of the water coming in from the southern branch. Following the other branch, which has a general direction of S. 65° E., the summit is reached in a further distance of thirteen miles, the route, for a great part of the way, being along the stony bed of the stream. The altitude of the summit is about 7500 feet.

“ The branch of the Brazeau on the other side, descends rapidly, but without any cañon, and bending northward, at a distance of thirteen

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miles from the summit it emerges from the mountains into a plateau country of about 5000 feet elevation. Three miles east of this place, the main branch of the Brazeau, which heads with the Athabasca River near Brazeau Lake, also comes out of the mountains.

“The rocks met with on this route are the same as those seen between Jasper house and Brulé Lake. Their attitude at the edge of the mountains, is, however, very different from that on the Athabasca. No folding or crushing is to be seen, but a straight uplift without contortion of the beds and apparently without overthrust, for although the talus from the limestones obscures the line of contact with the Cretaceous sandstones, these rocks are both found in place in the bed of the stream in positions that preclude the possibility of a lateral movement of any extent.

Uplift of mountains on Brazeau River.

“It was then decided that to return north-westward, near the base of the mountains, and to descend the McLeod River, was likely to yield more new information than could be gained by following the more direct route down the Brazeau and North Saskatchewan rivers. Accordingly, an old Indian trail leading in the required direction was followed. It traverses a level country, having an elevation of 5000 feet above the sea and strongly marked by terraces of round coarse gravel composed of limestone and quartzite materials. A low range of hills eight to ten miles to the north-east, through which the Brazeau River has since cut its way, at one time evidently held in a body of water here. Another branch of the Brazeau, nine miles from the one just left, was crossed, and six miles farther on the most northerly branch of that stream comes from behind a long range of foot-hills having an elevation of about 6500 feet. It seems probable, from the extent of the erosion in the Pembina valley lower down, that, at least part of the drainage from the mountains now emptying into the Brazeau, at one time found its way into the Pembina River which lies a few miles to the north.

“At this crossing of the Brazeau, there is an exposure of yellowish sandstones and black carbonaceous shales, with several small seams of coal, one of which has a thickness of three feet. The Indian trail forks at this place, one branch descending the river and the other following it up into the foot-hills, so a middle course across country was adopted, and the Pembina River, here a small stream, was shortly reached. Up to this time the country traversed has a dry climate, owing to the effect of the Chinook winds, but now, as the distance from the mountains had been gradually increasing, the effect of a greater amount of moisture was noticeable and muskegs and swamps became numerous. The result of a great fire which overran the country between here and

Pembina River.

the Athabasca River has, on the whole, up to the present time at least, been to make travelling less difficult.

“The first rocks met with on the Pembina River were dull olive-green sandstones and shales striking east-and-west, vertical. Further down the river the rock consists entirely of soft slate-gray shales, containing rounded and lenticular nodules of grey ironstone, sometimes cherty. As the river is descended, the dips become undulating and lower, until at nine miles down, the rocks are almost horizontal. These rocks closely correspond with the Pierre division of the Cretaceous.

Pierre shales.

Upper part of McLeod River.

“It is only three miles from here, across low hills, to the source of a stream flowing westward into the main branch of the McLeod, and five miles down this stream the first exposure of yellow sandstones of the Edmonton or Lower Laramie series, was found. The McLeod was reached at a point distant three days' travel from the Leavings. As the river is descended, numerous separate exposures are to be seen in the banks, showing irregular, coarse, yellowish sandstones, interbedded with clayey sandstone and blackish carbonaceous shale. One seam of coal was noted, six inches to a foot in thickness. Other larger seams are reported to occur higher up the river. Some prospecting has been done on the McLeod in which a certain amount of gold was obtained. It is found chiefly in a small seam in the river-gravels principally composed of dark materials derived from the shales.

“The return journey occupied eleven days from the Leavings to Edmonton, which was reached on the 14th of October.

Natural facilities of route.

“The natural facilities of the Yellow Head Pass as a route through the mountains, has been made known by the reports on the railway location line run for the Dominion Government, but perhaps sufficient weight has not been given to the fact that this route is entirely free from snow-slides. The importance of this fact can now be more fully appreciated on account of the great cost of the construction and maintenance of snow-sheds, since experienced in railway work. It may also be worthy of note that this pass affords an easy means of access from the North-west to the great valley previously mentioned, which forming as it does such a good natural highway, should eventually become the chief route for communication between north and south. The advantages of the route for a wagon road are even greater than for a railway, as in making such a road no rock cutting would be necessary.

Glacial drift.

“West of Edmonton, the country is generally deeply drift-covered, showing boulders of Laurentian rocks as well as of gray quartzites from the Rocky Mountains. At Lake St. Ann, besides these drift

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materials boulders of yellowish-gray limestone holding Devonian fossils are numerous, with a few of coarse purplish-red quartzite or grit. Laurentian boulders are found to occur westward nearly to the McLeod River, beyond which all the drift material has come from the mountains. The surface deposit is generally a yellowish-white sticky clay, impervious to water, and to this is largely due the extensive muskegs and swamps that characterize the route. The long eskers before mentioned, occurring east of the crossing of the McLeod River, are a notable exception to the general rule. No limestones from the mountains were noted east of the McLeod.

“Along the valley of the Athabasca River in the mountains, exposures of boulder-clay are found in the lateral valleys, mostly composed of local material but containing also many travelled boulders of quartzite. On the east side of the river, above Henry house, a terrace 600 feet above the river is composed of silty calcareous boulder-clay. Traces of this deposit are found along the Miette River, and westward beyond the pass silty terraces, less calcareous in character and for the most part free from boulders, are extensively developed along the Fraser River. The western limit of the silt deposits on the Fraser is a few miles above Moose Lake.

White silt deposit

“On the higher summits of the mountains, no trace of glaciation could be discovered. East of Tête Jaune Cache, at an elevation of about 7300 feet, heavy glaciation was noted running S. 25° W., an occurrence difficult to explain. A mountain north-east of Camp River, about 8300 feet above the sea, has the general smooth aspect of a glaciated summit, but no striæ or travelled boulders could be found.

Glacial triæ.

“The distribution of the principal trees is given in the following short notes:—Black and white spruce, poplar and cottonwood are found generally throughout the whole country traversed. Larch (*L. Americana*) extends as far westward as the McLeod River and ascends that river forty miles above the Leavings. It was not seen on the Athabasca or westward. Black pine (*P. Murrayana*) first seen thirty miles west of Edmonton, continues throughout. Douglas fir commences three miles below Jasper house and continues westward. The eastern “balsam” (*Abies balsamea*) was first seen on the Athabasca River, while *A. subalpina* was found generally throughout the mountains. White pine (*P. monticola*) was seen at Moose Lake on the Fraser River. White stemmed pine (*P. albicaulis*) was on most of the high mountains. Cedar and Hemlock (*Tsuga Mertensiana*) came in a few miles below Moose Lake and continue westward. Yew is found on wet mountain sides on the Fraser and Canoe rivers. Engelmann’s spruce was found generally throughout the mountains, and another

Distribution of trees.

form seen is probably that noted by Prof. Macoun as intermediate between this and the white spruce. Lyell's larch does not occur on the mountains in this district. Canoe-birch was first seen on the Athabasca River and continues westward.

Agricultural  
and grazing  
lands.

"One of the important resources of the region explored this season will be its agricultural and grazing lands. Farm settlements are at present to be found as far west of Edmonton as Island Lake near the Pembina River. Beyond that point, with one notable exception, no attempt at cultivation has been made. The exception referred to is a ranch three and a half miles below Henry house on the Athabasca. Mr. Swift has here demonstrated that the country is capable of producing wheat, potatoes, and various kinds of vegetables. On September 1st, he had harvested a crop of two varieties of good hard wheat, and his potatoes were good, both in size and quality. A great part of the bottom land of the Athabasca valley would yield good crops. There is an abundance of good grass all along the route from Edmonton to the pass, more particularly in the vicinity of the streams, and a wide belt of good pasture-land extends along the base of the mountains to the south. The country generally is capable of supporting a large amount of stock. Horses are wintered out successfully on the Athabasca River and at other places.

"In the wide bottom of the great valley passing Tête Jaune Cache, there is some good soil, and it may be safely said that one-fourth or more of its area would make rich farming land. A considerable portion of this is free from timber and covered with luxuriant grass suitable for making hay.

Collection of  
Plants.

"Mr. Wm. Spreadborough, made during the season a collection of the flowering plants which, I am told by Prof. Macoun, includes nearly all the species supposed to grow in the region examined. Several species were found which had not been collected since Drummond's time and two or perhaps three species new to science were secured. One of these, *Viola cyclophylla*, has since been described by Dr. E. L. Greene. In all about 525 species of flowering plants and some cryptogams were collected. The range of several species has been extended, and a number of plants previously known from the lower Columbia, but not found in the southern Rocky Mountains were collected on the Canoe River and on the head-waters of the Fraser River. This is due to the continuity of the great valley, so often referred to in this report, not only affording an easy means for these plants to extend, but also causing a congenial temperate climate to enable them to hold their ground."



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## ONTARIO.

Mr. W. McInnes, in the early part of 1898, was engaged in plotting and compiling the surveys of the preceding summer and in work upon a general report upon the region covered by the Seine River and Shebandowan map-sheets, already printed. Mr. McInnes left Ottawa on the 13th of June, with instructions to make a geological exploration of the country lying to the north of the Seine River sheet, of the series of geological maps of western Ontario and to the east of the Manitou sheet. This also involved the making of such surveys as were necessary to the compilation of an accurate topographical map of the district. The amount of surveying work which was required was too great to allow of completion of the map-sheet in one season, but about half the area was covered during the summer. Mr. H. L. Smith, who had been nominated to assist Mr. McInnes, accompanied him and satisfactorily performed his duties during the season. On the work accomplished Mr. McInnes makes the following report.

Work by Mr. W. McInnes.

Ignace sheet  
Rainy River  
District.

“After outfitting at Rat Portage, the season's work was begun at Dinorwic on June 19th. A micrometer survey was started at a point on the south-west arm of Lake Minnitaki about ten miles north of the crossing of Niven's fifth meridian line, and connecting there with last season's surveys. A continuous survey was made of the south shore of the lake to the inflow of English River and of English River with the lake-expansions along its course to Bear Lake, and thence to Ignace station on the Canadian Pacific Railway, by way of Sand Point Lake.

Lake Minnitaki.

“The shore of Minnitaki throughout the whole extent traversed, lies within the Keewatin system of rocks, though it is nowhere more than three miles to the north of the northern edge of the Laurentian granites and gneisses. All along the shores of the long, narrow, south-westerly bay, from the crossing of Niven's meridian line north-eastwards, the rocks exposed, are in the main massive diorites and diabases with areas of green schist which may probably be considered as crushed and sheared phases of the massive basic rocks. Associated with these basic rocks are areas, more limited in extent, of acid quartz-porphyrries and the schists derived from their shearing. Often the quartz-porphyrries are still quite massive, and in places they approach very closely ordinary granites. They are seen in places to clearly cut the green schists.

South-westerly bay.

“The strike all along closely follows the general trend of the shoreline, the curve of the latter, from a little east of north to a little north of east, being apparently determined by the strike of the schists. The

next bay, which in direction is closely parallel to that just described and is separated from it by a dividing ridge only half a mile to a mile and a-half in width, shows along its north shore the same set of diorites and green schists, with bands of felspathic schists and quartzschists similar to those above referred to.

Kapikwabikok Lake.

“The south shore of the bay is occupied by massive quartz-diorites and even-grained, hard, grey quartzites in which is developed in many places a rough schistosity striking parallel to the trend of the shoreline. Going southerly from the south shore of the bay and following up-stream a route leading to Kapikwabikok Lake, this band is crossed at about right angles to the strike and is found to give place, at a distance of about three-quarters of a mile from Lake Minnitaki, to basic green chloritic and hornblendic schists and massive diorites, that continue to the northern edge of the Laurentian. On Kapikwabikok and the lake lying between it and Minnitaki, are several small areas of hornblende-granite, biotite-granite and biotite-gneiss, that have the aspect of intrusives in the schists, which they invade in the form of long arms, and blocks of which they inclose. These represent, almost without question, outliers from the main granitic area which comes close to the southern end of the lake, and is at no great distance from the east shores of both Kapikwabikok and the lake to the north of it. Some of the areas may, very probably, be connected with the main mass, but the connection was not established.

“All along the main south shore of Minnitaki, to within about five miles of the outlet of Twin Lakes, massive felspathic quartzose rocks, probably quartzites, and their derived schists, form the shore, striking nearly east-and-west. For the next five miles, or nearly to Twin Lakes, the more basic schists and massive rocks are seen.

Twin Lakes.

“The greater part of Twin Lakes is occupied by the quartzites, the southern end of the lake extending into the diorites, which here again lie to the south of the more quartzose rocks and between them and the granites. Continuing along the main shore of Minnitaki, the quartzites extend beyond the point where the shore-line bends abruptly to the south, for about a mile down into the southern bay. The remaining shores of this bay lie altogether in the basic division, its extreme southern end reaching down to within a mile and a-half of the northern edge of the granites. The same rocks

English River.

are found up the English River as far as Otter Lake, where the Laurentian gneisses come in about two miles south of the head of the lake. At the expansion of the river into which Jarvis or Night-owl River flows, the gneisses are within a mile or less of the shore, and at one point, two miles east of the mouth of the river, the schists show

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arms and veins from the granite, cutting them in various directions, but generally along the planes of schistosity. Again, at Flying-loon Lake, another expansion of the river, the main Laurentian area is entered, its northern edge lying two miles from the south-west end of the lake. The rocks in immediate contact with the granite here are coarse, massive diabases. These rocks occupy the whole northern side of the lake, with the exception of a few hundred yards, about midway, where the red, biotite-granite of the south shore cuts into them and forms the immediate shore-line. A small, isolated area of rather coarse red, biotite-granite of even grain, occurs at the fall which forms the outlet of Flying-loon Lake. Southwards along the route from Otter Lake towards Ignace station, obscurely foliated, granitoid gneisses are continuously exposed, striking, wherever the foliation is clear, about east-and-west. In the vicinity of Ignace, and over a large area to the north and north-west of it, the rocks are non-foliated, and the granite consequently furnishes a good building stone, which is being largely used by the Canadian Pacific Railway for the construction of bridge piers and foundations.

Otter Lake to  
Ignace.

“The English River, at the time of our survey, early in July, was found to be almost at freshet height, so that its ascent was much slower than it would have been at ordinary summer level. A fall, with three short rapids immediately above it, occurs at the mouth of the river, and necessitates a portage of a little over three-quarters of a mile, or, at low water, four short portages. The total rise is here about forty-five feet. The next rapid, past which there is a portage twenty-eight chains long, and which rises about six feet, is only a mile above the first. A quarter of a mile further up-stream, rapids with an ascent of twenty feet, are passed by a portage of sixty-five chains. A mile and a-half of canoe navigation intervenes between this and the next rapids, where there is a rise of about ten feet and a portage of twenty-eight chains. A lake-like expansion of the river here extends westward for two miles and a-half, receiving near its head the waters of Beaver River which drains a lake of considerable size lying to the north-east of Basket Lake and known as Beaver Lake.

Route by  
English River.

“Swift water with numerous rapids following closely upon one another continues to Flying-loon Lake. In this distance of eight miles there are five short portages with a total rise of about forty-five feet. A rise of about five feet, with a short portage and a stretch of one mile of very rapid water, separates this lake from Jarvis Lake, between which and Otter Lake there is a rise of perhaps six feet. At Otter Lake the river divides into two branches, one draining a short chain of lakes lying to the north-east and forming the route of travel

Two branches  
of river.

to Sturgeon Lake and all eastern points, and the other, the main English River, coming in from the south. The main river was followed to Bear Lake which is about thirty feet higher than Otter Lake, the principal rise occurring at three short rapids near Bear Lake. The total ascent between Minnitaki Lake and Bear Lake is, therefore, in the neighbourhood of one hundred and sixty feet.

Alternative  
route from  
Ignace to  
Minnitaki.

“ Another route from Ignace to Minnitaki Lake, lying south of that above described, was then surveyed. The first lake of any considerable size on this route is that roughly indicated on some maps and called Orang-outang, evidently a mistranslation of the Indian name Mameigwess, meaning a ‘ wild man ’ or ‘ dweller in rocks. ’ This lake is reached from Sand Point Lake by ascending a smooth-flowing, winding stream of ample volume for loaded canoes. The exposures of rock along the river are of biotite-granite and very obscurely foliated granitoid gneiss. Mameigwess Lake has a coast-line of about thirty-two miles and lies wholly within the gneiss area. Kukukus (Night-owl) Lake, is reached from Mameigwess by a series of five smaller lakes, gneisses only occurring all along the route as well as about the shores of the lake itself. A micrometer survey of the lake gives it a shore-line of fifty-five miles and a total length of a little over thirteen miles. It discharges into English River at Flying-loon Lake by a short river with numerous rapids and a descent of thirty-five feet. Basket Lake and a crooked, narrow lake thirteen and a-half miles long lying just east of it, were also surveyed, together with the river by which they discharge into Kukukus Lake. A few small areas of pine still remain on the shores of the river and lake. The rock exposures show no variation from the granitoid biotite-gneisses, excepting in the replacement of the biotite constituent by hornblende, which occurs in a few places. The very irregular shape of the lake gives it a shore-line disproportionate to its area, the former measuring fifty-six miles and the latter only a little over fifteen square miles.

Beaver Lake. “ Minnitaki Lake was reached by way of Beaver Lake, eight miles long, and several small lakes. The granitoid gneisses continue to within a mile of the east end of Kapikwabikok, the strike of the foliation swinging from north-east on Beaver Lake, to nearly north, parallel to the edge of the area as its western limit is approached.

Route from  
Little Wabi-  
goon to  
Ignace.

“ A route from Little Wabigoon by the Wabigoon River to the head of Turtle River was then examined, and thence, by a series of lakes and streams the head-water of Turtle River was connected by a micrometer survey with the Canadian Pacific Railway at Ignace Station.

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“The route followed, up Snake River through Long Lake and another narrow lake to its head-waters, continued in rocks of Keewatin age from Wabigoni to beyond Bending Lake on Turtle River. The north-eastern edge of this Keewatin belt was fixed at a number of places along the route by offsets through chains of smaller lakes, and proved to be close at hand all along—never at a greater distance than three miles from the main route. This gives to the belt a width varying from twelve miles, at Snake Lake, to eight at Bending Lake. It was found to terminate just beyond Bending Lake, becoming gradually more and more metamorphosed, the diorites and green schists towards the end becoming hornblende-schists and fine hornblendic and micaceous gneisses, having a strong resemblance to the Coutchiching of Rainy Lake and cut in all directions by veins and masses of coarse, white, pegmatite-like, granitoid gneiss. On the western side of Bending Lake, the hornblende-schists are interlaminated with seams of magnetic iron, sometimes as much as a few inches in thickness. These occur in sufficient volume to render compass work about that part of the lake quite impracticable, but they were not seen, in the hurried examination we were able to make, in such quantities as to be of any definite economic importance. On Birch Narrows or Richard Lake on which the extension of this band south-easterly would be exposed, no trace of Keewatin rocks is seen, unless they are represented by the bands of fine black hornblende-gneiss that occur there, in insignificant volume as compared with the coarse, white, biotite-granite and granitoid gneiss and which are contorted and cut by the latter rocks.

Extent of  
Keewatin.

Iron ore.

“On the route north-eastwards to Ignace, a belt of Keewatin rocks consisting for the most part of highly crystalline hornblende-schists and fine gneisses, is crossed just south of Ogema Lake. It has here a width of from two to three miles only, and represents in all probability an extension of the belt which crosses the railway between Taché and Raleigh. South of the belt, the gneisses have a general east-and-west trend, and north of it a north-easterly foliation.

Keewatin at  
Ogema Lake.

“In this belt, on an island in the lake south of Ogema Lake, occurs a quartz vein varying in width from over six feet to quite narrow, which has been partially stripped. In places it is well mineralized with pyrrhotite and pyrite with some calcopyrite and is, as far as can be seen from present stripping, very irregular, with spurs running along the foliation of the inclosing hornblende-schists and mica-schists. It is stated that assays have given a certain amount of gold.

Quartz vein.

“For the purpose particularly of fixing the limits of the Keewatin belt crossing the railway east of Taché, surveys were made of lakes lying to the south of the track between Raleigh and Butler stations.

Keewatin belt  
at Taché.

These lakes were reached by way of Mameigwess, by a route that crosses the railway near the 265th mile-post and follows the Wabigoon River up its principal branch, to a large lake having an elevation of about a hundred feet above the railway, not more than two miles from the track. The whole ascent is practically made in a distance of seven chains, where the river forms a succession of vertical pitches. About the lake hornblende-schists and diorites are well exposed, everywhere much crushed, twisted and invaded by granites, which on both the east and west shores of the lake occur in massive form. A series of small lakes, most of them merely beaver ponds, was followed southerly for about four miles from the south-east bay of the lake, and a very much mixed set of diorites, hornblende-schists, quartz-porphyrines and fine gneisses was found to extend for the whole distance. Frequently no sharp line of demarcation could be drawn between the schists, gradually merging into fine gneisses, and the ordinary gneisses of the Laurentian area, a species of contact which seems to characterize the relations of the Laurentian to this Keewatin band all along.

Wabigoon  
River.

“A track-survey was made of the Wabigoon River, and the western edge of the granite area of Blueberry Lake was better defined. It is along this contact and in a belt of Keewatin adjoining it, that so many promising properties have been taken up during the past year. To assist the development of these, a road has been cut out from the Canadian Pacific Railway into the centre of the mining district, locally known as the New Klondike.

Auriferous  
quartz veins.

“Work, at the time of my visit, was being done on two properties, numbered 416 HN. and 419 HN. respectively. On the first, held by a Winnipeg company, a shaft of eighty-feet has been sunk, but was full of water, and preparations for pumping it out were then in hand. The main vein at the outcrop varies in width from eighteen inches to less than a foot. It was found to hold a course of N. 64 E. (mag.) for about three hundred feet, where a sudden bend easterly, almost at right angles, was accompanied by the development of a mass of quartz forty or fifty feet in diameter, with the outer wall underlying at a very appreciable angle towards the original vein. At a distance of sixty feet the vein resumes its original direction and size and has been stripped for a further distance of five hundred feet. Beyond this, Mr. Thos. Hogan, who is engaged in its development, states that he has traced it across the two succeeding locations. The vein occurs in a quartzite-like rock which merges into a quartz-porphyrine, which is itself probably intrusive in the crushed diorites that form the prevailing country-rock. The vein is generally well-defined, with good walls, and carries zinc-blende in notable quantity with iron-

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pyrites and chalcopryrite, and shows some free gold. A spur offsetting to the south-east forms a narrow vein which is also fairly well mineralized. A good, general average gold-content, is claimed for the main vein.

“ At 419 HN., sinking was being pushed forward in a shaft that had then reached a depth of 115 feet. The vein, which was being developed by an English company, was small, running from a foot to only a few inches, and had been traced on the surface for only a short distance. The values were high enough, however, to warrant its development, in the hope that it might strengthen in depth. After losing the vein at eighty feet, the shaft was continued downwards and the vein, or a vein, was again picked up, which, at 115 feet showed six inches to ten inches of quartz across the shaft. Like 419 HN., the quartz carries iron- and copper-pyrites and zinc-blende, with a considerable amount of visible free gold. The containing country-rock is here a green schist, evidently derived by shearing from a diorite or diabase.

“ Work, in the way of stripping, test pits, etc., has been done on a number of properties in the neighbourhood, that lie in a contact zone of the Keewatin with an intrusive granite area. Spurs of the granite invade the green schists in many places, and it is not improbable that some at least of the quartz-porphyrines are phases of the granitic intrusive, although generally they seem to represent the later extravasations from the magma which supplied the basic diorites at an earlier stage.

“ The remainder of the season was spent in making an examination of the section afforded by the exposures and cuttings along the line of the Canadian Pacific Railway, which traverses the area of the sheet from north-west to south-east. The western end of the section shows the lacustrine, stratified, silty clays extending easterly along the track to between Dymont and Taché stations, or to an elevation of a little over 1250 feet. Occasional exposures of Keewatin schists are to be seen outcropping here and there through the drift to within about half a mile of Taché, where the north-easterly corner of the granite area of Blueberry Lake crosses the track and extends along it for about two miles. Beyond, and extending eastward for six miles, or to just beyond Raleigh, is another belt of Keewatin, made up for the most part of hornblende-schist and very fine gneiss.

“ Near the contact of these rocks and the granite, a number of locations have been taken up, and on one at least some preliminary work has been done in stripping and sinking a few test-pits. The country-rock here is a hornblende-granite that incloses blocks and

Rocks seen  
along railway.

Stratified  
silt.

Gold locations  
near Raleigh.

extended, broken bands of diorite. It shows often an obscure foliation striking about N. 55° W. The quartz occurs as a series of lenses of very irregular shapes and sizes, along a line running about N. 20° E., and probably representing a line of fracture. The mode of occurrence of the quartz is extremely irregular. It varies from stringers and small lenses one foot in diameter, to masses fifteen to thirty feet across, often with their longer diameters parallel to the foliation of the rock and nearly at right angles to the line of outcrop of the quartz. Following the line of outcrop, the quartz can be traced, not continuously, but in exposures occurring at close intervals, for a distance of about fifteen chains.

“The quartz is not highly mineralized, showing, as far as noted, only a little iron-pyrites. Samples taken from the surface and representing as nearly as possible the average quartz are being analyzed in the laboratory of the Survey.

Granitoid  
gneiss.

Silts.

“After crossing the Keewatin belt above mentioned, the remainder of the section to English River lies entirely in the granitoid gneisses striking generally but a few degrees either way from east-and-west. The white, silty clay of the Wabigoon area does not again appear. Cuttings through drift are, however, numerous, showing with but a few exceptions unstratified material, varying from a clay inclosing large angular boulders through coarse gravel to sand. All seem to be glacial in origin and they are seldom even modified by subsequent water action. Glacial striae, averaging about S. 30° W. in direction, are seen at many points.”

Work by Mr.  
D.B. Dowling.

Mr. Dowling was employed during the early part of the year in compiling certain facts relative to the orography of the Arctic Islands and the northern part of the continent for mapping purposes. He also completed a draft report on the Cambro-Silurian rocks of the Lake Winnipeg Basin, which had been delayed pending the examination of the fossils collected there, undertaken by Mr. Whiteaves. He also prepared the manuscript of the Lake Winnipeg map-sheet for the engraver.

Lake Nipigon.

As it appeared desirable that the geological examination and survey of Lake Nipigon, already partially accomplished by Dr. Bell in 1869 and 1871, supplemented in 1894 by a traverse of the shores by Messrs. McInnes and Dowling, should be completed for publication, Mr. Dowling was requested to undertake this work. The survey made in 1894 consisted of a traverse with transit and micrometer around the shore-line, while many large islands and two large bays had not been visited. Arrangements were made with the Hudson's Bay Com-



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pany whereby the use of one of their large sailing-boats was secured, and a cedar canoe was shipped to Nipigon Station by rail. On the work Mr. Dowling reports as follows :—

“ Leaving Ottawa on the 16th of July, I proceeded to Nipigon station, near the outlet of the Nipigon River, where four men were hired. Two of these, Indians from Lake Nipigon, had brought a boat over from the Company’s trading post for our use. This had been left near the outlet, and the men coming down by canoe arrived before the party had been completed. With a good load of provisions in the canoes we reached the lake on the 24th of July, and the survey of the islands was commenced the next morning. The order in which they were visited was in a general way from south to north-west and then north and eastward till all were surveyed, or, in the case of small ones, fixed by cross bearings. Several elevated points on the mainland and islands afforded good views, and were occupied as transit stations, from which a series of angles on the positions of islands were read and sketches made. Thus at Gros Cap on St. Paul Island, our station was at an elevation of 300 feet, and we had a view to near the north end of the lake. Our station on the south-east end of Grand Island was at an elevation of over 200 feet, while that on the Outer Barn was at 450 feet, affording a view in which the whole width of the lake was seen and angles read on elevated points up to forty miles away. Other stations at lesser elevations furnished a network of triangles covering the width of the lake, so that a connection across was made at several points. Ombabika Bay, across the mouth of which we passed in 1894, was traversed by transit and micrometer during this season, as also Pijikawabikong Bay at the south-east corner of the lake. Several streams entering the lake, mainly on the east side, were ascended, and estimated traverses of their courses were made. From Ombabika Bay, Little Jack-fish River was traversed for fifteen miles. The Vermilion River, emptying into Humbolt Bay, was examined for a similar distance, and the Sturgeon River, near Poplar Point, was ascended to a point about twenty miles from the lake. Two routes being known to our men, we left the river at the first long portage, and by a chain of lakes to the south, followed parallel to the river for nearly ten miles, then, returning to it again we ascended as before. On the return journey the whole of the river so avoided was traversed.

Triangulation surveys of islands.

Surveys of streams.

“ Smaller streams were found flowing from the east, but as they are little travelled by the Indians short excursions only were made up these.

“The survey of Nipigon River made in 1894, did not include the upper part, or that above Lake Hannah, the short route to the lake *via* the Flat-rock Portage having been followed. This gap was therefore filled by our surveys made at the close of this season. A map of the lake and river can now be compiled. The need of a good geographical chart of the river may be inferred from the fact that over four hundred and fifty sportsmen visited this river during the fishing season from June to the middle of September.

Rocks of the islands.

“The rocks of the islands in the central portion of the lake are all formed of trap—the ‘crowning overflow’ of the Nipigon formation, while a few at the north extreme and near the eastern shore, as in Ombabika Bay and Humboldt Bay, are of gneiss and dark-green schists referable to the Archæan. Little arable land is to be found on any of them, as the covering of drift is very thin and consists mainly of boulders, while the surface of such as are formed of trap is very irregular being generally a mass of broken fragments.

Shakespeare Island.

“Several of the islands are of considerable extent. Shakespeare Island, east of the entrance to McIntyre Bay, is roughly rectangular in outline, six miles long from north to south, and five miles broad, but from the eastern side, a group of islands appears to extend this, five miles in a south-east direction. Several high hills form prominent landmarks, the most conspicuous being Pauskeese Mountain, an isolated mass of trap near the west end of the island. A high ridge at the north-east corner is also prominent, as well as Hat Mountain on one of the islands of the group to the east.

Grand Island.

“Grand Island, near the western shore, is roughly triangular in shape with a length of about ten miles. The coast-line measures over twenty-seven miles. The main body of the island is high, having a general elevation of over two hundred feet above the lake.

“Stretching northward, and separated by narrow channels, are several large islands reaching to near the north end of the lake. These, with the addition of Murchison Island, a large high island near the east shore, constitute the main body of the islands of the northern part, though numerous others of smaller size are scattered about in an irregular manner. The whole group occupies an elliptical area inclosing a rather shallow basin in the centre of the lake. Between these islands and the eastern shore, a very deep channel is found, evidently formed by the denudation of the trap and underlying sediments down to the original floor, and as the Archæan rocks are found along the eastern margin of the lake overlaid by heavy beds of trap, the slope of the original basin must here have been very steep.

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“Livingstone Point, on which a heavy bed of trap still rests, shows the upper surface to dip very sharply to the west. The inner end of the trap hill reaches to a height of about six hundred feet, while the western end is only about two hundred feet in elevation. The inner side of the ridge inclosing Ombabika Bay is also much higher than that facing the lake. The inland extensions of these ridges about the northern part of the lake are eroded away, and the Archæan rocks succeed them to the east, but toward the south-east the limit of the trap is apparently at a greater distance from the lake, and could not be ascertained without many traverses across country eastward. Eastern edge  
of trap.

“The topography is without doubt greatly influenced by the erosion of the great mass of trap that may be said to have filled the basin. The exposures all along the lake, show the mass to have been very much broken by vertical fissures, so that most of the cliffs are subject to frequent falls of rock; but a series of greater fissures would appear to have also been formed upon the cooling of the mass of molten trap. These no doubt surrounded, in an irregular manner, local centres of greater thickness, and were enlarged by the subsequent sinking of parts of the basin owing to the displacement of such a large mass of erupted material from below. That these great lines of fissure extended along the eastern side of the basin, is shown by the existing traces in the mass of trap confining the southern end of the lake, the outlet by the river being roughly along a great fault or break forming a cañon, the eastern side of which is almost precipitous, and rises to nearly six hundred feet—the western side very much lower and decreasing in height to the northward. Other great faults no doubt run northward between the islands and the ridges on the east shore. Faults.

“The denudation of the rocks along minor lines of fracture is well exhibited in Pijitawabikon Bay, a long, narrow break in the high plateau, branching out at its head into irregular, small, deep gullies, in which are insignificant streams.

“Many of the high ridges appear to be of the nature of immense dykes, and it is found that at several points the trap has broken up through the limestones and underlying sediments, displacing and disturbing them laterally, as at Cook Point, or filling gaps or breaks in the Archæan, as was noted near the mouth of Little Black River, and at the long portage on Sturgeon River. Great dykes.

“It was found, by ascending several streams from the north and east shores, that a terrace of sand, about one hundred feet above the lake, through which the streams have cut deep valleys is here developed. The upward extension of the terrace, limited in width by the slope of Sand terraces.

the underlying rocks, was found on the Jackfish River to be nearly ten miles, and on Vermilion River and other rivers farther south along the east shore, was considerably less. The White-sand River, on the west side of the lake, also flows through sand terraces, and a lower one is found spread out over the low country from this river to Mount St. John.

“ Vermilion River and Sturgeon River, on the eastern shore, also show deposits of stratified sand, from an elevation of nearly one hundred feet down to near the lake-level.

“ The underlying rocks are seen on these streams only at the various rapids and falls. On Little Jackfish River, greenish gneisses and schists, similar to those of the Couchiching series, are met with, and on the Vermilion River, which enters Humboldt Bay, schists and greenstones of the Huronian, form a band running east-north-east from the head of the bay. At the first rapid and on the island at the mouth of the stream, the contact between these dark rocks and the gneisses is found. It is of the nature of a zone of intrusive granite in which contorted stringers of both rocks are found, the general strike of both gneiss and schist being nearly parallel, running about ten degrees north of east.

Huronian  
rocks.

“ The Sturgeon River, for twenty miles, or as far as traversed from the lake, occupies a depression in rocks of the Huronian, running very closely along the strike, so that no great width of beds is seen ; but besides the greenstones and schists so common to this formation, beds of coarse conglomerate occur on the lake route above the long portage. A high ridge of trap starting from Mungo Park Point on the lake, north of the mouth of the river, runs in a direct line south of east and crosses the valley of the river at the long portage.

Economic  
minerals.

“ An abrupt break of half a mile in width, allows the passage of the stream, and through this the river pours over many small falls and rapids, past which a portage of a mile is made, the fall in that distance being over fifty feet. The rocks above and below being of Huronian greenstones, this ridge appears to be of the nature of a great dyke, as all the exposures on the stream in the gap are of the dark brown trap. A number of mining claims were staked out at the mouth of the river some years ago, but no paying ores appear to have been found. Ore from a band containing disseminated pyrites was shipped out, but appears to have been of little value. The stream has been prospected but without very much success. Specimens of the ores from the mouth of the river, as well as a pyritous rock from the Steep-rock Fall near Crooked Lake, were secured. Gold was reported as discovered west of Nipigon River in the vicinity of the western part of Purdom

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township. The sample that was shown me consisted of a small piece of quartz in which several particles of gold were plainly visible. As the locality was not yet staked out it was kept secret.

“During the course of the work, twenty-five photographs of lake features and rock structure were taken and a series of rock specimens was collected.

“Our surveying operations terminated on Sept. 21st at Camp Victoria, and we then proceeded to Nipigon, where the men were paid off and the canoe and camp furniture were stored. Ottawa was reached on Sept. 26th.”

Dr. R. Bell devoted time during the winter of 1897-98 to writing a report for issue with the French River sheet of the Ontario series of maps; also to geological and topographical compilation connected with other maps on the north shore of Lake Huron. The discovery of gold at Michipicoten having drawn a good deal of attention to that district, Dr. Bell was requested to undertake a further geological examination of it, his preliminary report upon which is as follows:—

“The field-work of the season of 1898 occupied about four months. I left Ottawa on the 5th of July and returned on the 8th of November. The greater part of this time was spent in the Michipicoten gold district, which lies at the north-eastern angle of Lake Superior, but having completed the principal field-work there early in October, the remainder of that month was devoted to making a survey of the whole course of the White River or eastern branch of the Missisagui (or Missisauga) and an exploration of the country about its source, in order to complete for publication the northern part of map-sheet 129. I have to thank Messrs Eddy and Jordon for facilitating this work.

“In performing the work in the Michipicoten district, my party consisted of two assistants, Mr J. M. Bell and Mr Howells Frechette, and from five to seven bush- and canoe-men as required; but while engaged in the White River work during the remainder of the season, I was accompanied by only two canoe-men. I may here express my entire satisfaction with the efficient manner in which every member of my party performed his duty.

“It was the discovery of gold near Michipicoten in 1897 that rendered it desirable to have a more exact and complete survey of the surrounding district than had hitherto been made. The most important section of the gold-bearing area of this region lies within the western half of map-sheet 143, of the Ontario series, the remainder of the

auriferous tract extending northward into the ground covered by sheet 156, of which both the topography and geology are sufficiently well shown on my map of the basin of Moose River published in 1881.

Michipicoten  
mining divi-  
sion.

“Following the discovery of gold at Wawa Lake, near Michipicoten, a large tract around the north-east angle of Lake Superior was proclaimed as a gold district by the government of the province of Ontario in 1897. This district is described in ‘an Order in Council approved by His Honour the Lieutenant-Governor the ninth day of September A. D. 1897’, as the ‘tract limited upon the east side by the meridian of the east end of Dog Lake or say eighty-four degrees west from Greenwich, on the south side by the latitude of Cape Gargantua, say forty-seven degrees thirty-six minutes, on the north side by the latitude of forty-eight degrees thirty minutes, and between the westerly ends of these lines of latitude where they touch Lake Superior, by the shore-line of said lake, containing about five thousand square miles, be declared a Mining Division and that the name thereof be the Michipicoten Mining Division.’

Previous  
work.

“I had incidentally done more or less topographical and geological work in this region in the years 1875, '76, '77 and '81, which, with the results of the present season's operations will enable me now to compile a map of it showing both the geography and the geology with considerable accuracy of detail.

Difficulties  
encountered.

“The district is not an easy one to survey and map, because of its primitive condition and other circumstances. There are only a few canoe-routes within its limits, and these are difficult on account of the numerous portages, as well as the broken and rapid character of the streams, due to the general slope of the whole country towards Lake Superior. No roads or surveyed lines exist, while the hilly nature of the district and the almost impracticable character of much of the bush, render ‘traversing’ in the woods a very arduous undertaking. In spite of these obstacles, however, I succeeded in obtaining all the

Surveys made.

data required for the construction of a map. Within these limits we made micrometer surveys of the coast of Lake Superior to the western and southern margins of the sheet, and also of all the streams and inland lakes where canoes could be employed. Sketch-surveys were made of the smaller streams and of the lakes inaccessible to canoes, while various trails and all the old tote-roads which had been used in the construction of the Canadian Pacific Railway, were carefully located on the map by pacing and taking compass bearings of every change in their course. Finally, in order to ascertain the geology in sections where no prominent topographical features were known to exist, we made numerous traverses through the bush, some

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of them being of considerable length. Our difficulties were increased by continued wet weather, the season having been the most rainy one for the last thirty years. The insect pests, which are always a serious Insect pests. obstacle to all kinds of work in the woods during the summer season, were this year unusually troublesome, especially the mosquitoes, black flies and sandflies.

“As many observations for latitude were obtained as the weather Observations and photographs. permitted me to take. A considerable number of photographs were secured, and barometric readings were everywhere recorded in order to ascertain the elevations of mountains, hills and terraces, as well as of lakes, waterfalls and river-stretches. The temperature of the water was noted every day as an indication of climate. Notes were constantly made as to glaciation and surface geology, which are always interesting and often important subjects. Particular attention was Specimens collected. paid to the nature and the mode of occurrence of the gold-bearing veins of the district. The principal discoveries were visited and fair samples for assay were broken by myself from the veinstones *in situ*. Observations were always noted as to the distribution and the local characters of the forest trees. But as I had made large collections of plants in this district in previous years and had also made somewhat extensive collections of insects of the orders Coleoptera and Lepidoptera, I did nothing further in these lines during the past season.

“It would have facilitated my geological work very much if Want of topographical surveys. accurate surveys had previously been made of the principal topographical features of the district, because the time I was obliged to devote to this work necessarily occupied a large proportion of the season.

“A considerable proportion of this district is occupied by two belts Huronian belts. of Huronian rocks, lying at right angles to one another; the larger one, which for convenience we may designate the Michipicoten belt, running north-eastward, and the smaller, which may be called the Cap Choyé belt, south-eastward from Michipicoten Bay. A narrow interval of granite at Burnt Point, separates these at the shore of Lake Superior; but inland, the extension of this granite occupies the whole of the triangular space between the two belts and the eastern boundary of the sheet. The larger belt is bounded on its north-western or outer side by the older Laurentian gneisses, and the smaller one on its south-western side by both granites and gneisses.

“The former has an average breadth of about fifteen miles, and it Michipicoten belt. extends from Michipicoten Bay to a short distance beyond the line of the Canadian Pacific Railway at Missinabie station, a distance of forty-six miles. On the shore of Lake Superior it reaches westward

from the mouth of Michipicoten River to Dog River, a distance of ten miles, and southward from the former river to Burnt Point Harbour, a distance of ten miles also. Near the mouth of Michipicoten it throws off two narrow spurs to the eastward, each of which runs into the granite area a distance of about ten miles. Without a map to accompany the description it is difficult to convey an accurate conception of the form of this belt or triangle. It may, however, be said that its north-westerly boundary runs as a curving line north-easterly from the vicinity of the mouth of Dog River on Lake Superior to the Magpie River, which it intersects at about eleven miles in a straight line below the crossing of the Canadian Pacific Railway. The south-easterly boundary, after giving off the two spurs already mentioned, follows a north-easterly course to the outlet of Mattagaming Lake (often erroneously called Dog Lake).

Rocks of this belt.

“The rocks of the Michipicoten belt consist mainly of slaty and amorphous greenstones with occasional massive crystalline varieties. There are also smaller proportions of hornblende-schists and mica-schists, greywackes, argillites and clay-slates, siliceous, felsitic and other crystalline schists, quartz-pophyries, conglomerates or agglomerates, breccias, dolomites, etc., in still smaller amounts. An isolated area of red granite about two miles in length occurs on the west side of the Magpie River just above the second portage from its mouth.

Outlines of Michipicoten belt.

“The following is a more detailed description of the Michipicoten belt:—Beginning at its southern extremity, the line of contact between the granite on the east and the Huronian schists and other rocks on the west, runs northward from Burnt Point Harbour with an eastward curve to the Michipicoten River, which it strikes about two miles from the mouth. The boundary next runs south-eastward along the southern side of the spur of Huronian rocks above mentioned. The north-eastern side of this spur, which runs south-east, crosses the Michipicoten River just above the foot of Long Portage. From this point upward along the river, the rocks, as far as the junction of the Sequamka, are mostly gray granites of various shades and textures, while those south of the mouth of the river are mostly red granites.

First spur.

Second spur.

“The second of the narrow Huronian spurs already mentioned, crosses the Michipicoten River at the mouth of the Sequamka River. This stream was surveyed by micrometer to the edge of the sheet, and the rocks observed upon it consisted entirely of gneiss, the strike of which varied from W.N.W. to W.S.W. Gneiss occurs again at Cat portage on the Michipicoten about a mile above the Sequamka, and



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also in the hills to the north-west of the outlet of Whitefish Lake, striking east-and-west in both localities.

“Around the shores of Whitefish Lake, at Pigeon portage and about the southern part of Manitouwick Lake, the rocks are mostly gray granite. On other parts of the latter lake, gneiss, greenstone and green schists as well as granites are found. Near the south-western extremity of the main body of this lake, a hill of gray granite on the north-west side is faced by a large dyke of diorite, which forms a bluff 250 feet high. The dyke may be 300 or 400 feet in width, and it runs about south-west and north-east. Its existence may have had some connection with the geological history of the lake, which also runs in the same direction. The diorite is lighter in colour and coarser in texture in the centre of the dyke than towards the sides.

Rocks on  
Whitefish  
Lake.

“The canoe-route from Manitouwick to Wawa (properly Wawagonk), which I also surveyed by the micrometer, follows a chain of small lakes and streams, lying in a tolerably direct course. Several excursions were also made from the line of this route into the country on either side, for the purpose of ascertaining the character and extent of the rock-formations. With the exception of a hill of gray gneiss 300 feet high on the north-west side of the route, the only rocks seen between Manitouwick and Hawk lakes consisted of red and gray granites, which continue to the second pond south-west of the latter. From this pond to Wawa Lake, there is a variety of green and grayish crystalline schists and greenstones, agglomerates, greywackes, etc.

Manitouwick  
to Wawa.

“Around Wawa Lake and thence to the mouth of the Michipicoten, slaty and massive diorites prevail. In the hills overlooking the northern side of Wawa Lake near its north-eastern extremity, a massive looking white-weathering rock is very conspicuous owing to the woods having been mostly burnt off. It consists of a compact light-reddish felsite with a decided conchoidal fracture and showing lines of lamination parallel to the general strike of the other rocks in the neighbourhood. The white crust, due to weathering, which generally characterizes felsites is here very marked.

Wawa Lake.

“The tote-road from the north-east end of Wawa Lake to Grasett station on the Canadian Pacific Railway, which was in use during the construction of the line, was surveyed by pacing and bearings all the way to the northern edge of our map. It crosses the Magpie River about eight miles within the sheet. The rocks observed along this road are all Huronian and consist of massive and schistose greenstones, a variety of schists some containing much free silica, gray micaceous schists, solid and schistose graywackes passing into gneiss and felsitic schists of various colours.

Wawa to  
Grasett.

Magpie River. "On the Magpie River, between its mouth and the northern margin of the sheet, the rocks noted were massive diorites, both crystalline and micro-crystalline, slaty diorite, chloritic, micaceous and hornblendic schists, soft, light-greenish-gray schists with calcspar, sericite, glistening gray schist, volcanic breccia and graywacke schist-conglomerate, besides the small area of red granite already mentioned.

Cap Choyé belt.

"A cross-section of the smaller or Cap Choyé belt, at right angles to its strike, occupies the coast of Lake Superior from Old Woman River to the bay on the south side of Cap Choyé. This belt runs inland in an east-southeasterly direction and has an average width, as ascertained by different traverses, of eight or nine miles, or about two-thirds that of the Michipicoten belt. Its boundaries appear to be nearly parallel to one another. The rocks of this belt consist principally of schistose greenstones, siliceous and coarse argillaceous schists, together with smaller proportions of other crystalline schists similar to those which have been mentioned as occurring in the Michipicoten belt. A patch of red granite within this belt was observed on the shore of Lake Superior. The existence of these Huronian rocks in this section of the coast is shown on my map of 1881, already referred to, but it was only during last summer that we proved them to form a great belt running across the sheet. This fact is an important addition to our knowledge of the geology of this district, as these rocks will probably prove auriferous like those of the Michipicoten belt. A good many years ago, a quartz vein, said to be large and well charged with copper-pyrites was found and opened by a Mr. T. Fréchette, about fourteen miles east of Gargantua Harbour. We were unable to rediscover this vein, but we came upon the prospecting camp in its vicinity and obtained some samples of the ore which are rich in copper and may contain gold as well. I was credibly informed that another copper vein had been discovered in the course of this belt further east, or at a place lying to the northward of the mouth of Agawa River.

Economic minerals.

"The economic minerals of the Michipicoten mining district hitherto discovered, consist of iron, copper, and gold ores, and granite suitable for monuments and construction.

Iron.

"*Iron.*—A large deposit of iron ore occurs on the shore of Lake Superior at Little Gros Cap, near the mouth of Michipicoten River, and an attempt was made to mine and export it about twenty-five years ago. As the locality is fully described in my report for 1876, nothing further need be said in regard to it.

Copper.

"*Copper.*—Thirty years ago, indications of copper were discovered at several places around Wawa Lake, and a Mr. J. T. Johnson of Detroit purchased from the Government a number of large locations

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surrounding the north-eastern half of the lake. Some prospecting was done on one of these, near the centre of the south side of the lake, and, I was informed by a man who had been engaged in the work, that a promising vein of quartz with copper-pyrites had been found. Some of the ore may still be seen lying about at the site of the buildings which were erected at the time the prospecting was going on, but as the location is now overgrown by a dense thicket of brush-wood and young trees, we were unable to find the old workings. The occurrence of copper-pyrites at two localities in the Gargantua Huronian belt has been referred to in describing these rocks.

“*Gold.*—In the Michipicoten district, the precious metal occurs in Gold. the form of finely disseminated free gold in quartz veins. The principal discoveries so far have been made around Wawa Lake and all the way across the Huronian belt between this sheet of water and the foot of the Long Portage on Michipicoten River. The associated rocks are the schistose greenstones and greywackes with crystalline diorite or diabase occasionally in the vicinity. The veins in this tract are numerous and often of a good workable size—say from four to six feet in width. Their prevailing course approximates to a northerly direction. The quartz is of a hyaline variety and contains only very small quantities of associated minerals, comprising copper-pyrites and iron-pyrites with a little calcareous spar.

“So far, the work done can only be called prospecting. Numerous Prospecting prospecting pits have been opened and at the Jubilee mine a shaft had work. been sunk to a depth of sixty feet on the underlie of the vein. As yet nothing can be said with certainty as to the richness of the ore, as no commercial tests have been made and the reported assays cannot always be relied upon. In some cases specks of gold in the quartz can be seen by the naked eye or with the aid of a magnifier. Average samples were collected by me for assay from the principal ‘prospects.’

“On the south side of Michipicoten River and thence to Burnt Point, several quartz veins have been discovered and mining claims located, but I was only able to visit one of these.

“The sands and gravels of the valleys of the Michipicoten and Magpie rivers, having been derived largely from the disintegration Alluvial and glacial crushing of the Huronian rocks of the vicinity, in which claims. no doubt great numbers of small as well as some large quartz veins existed, contain a notable proportion of quartz vein-matter. It is said that the more quartzose of these gravels and sands have yielded gold on assay, and, in consequence of such reports, many sand claims were started and registered in the books of the local inspector of mines, but I have no reliable data as to the proportion of gold which

may have been detected. No attempt has been made to work any of these claims."

Work by Mr. A. E. Barlow. The greater part of the winter of 1897-98 was spent by Mr. A. E. Barlow in working up the various surveys made during the preceding season in connection with the Haliburton map-sheet, (No. 118) while progress was made in the collection and compilation of material necessary for this map. A part of his time was likewise devoted to a study of the geological results obtained during the progress of the field-work, as well as to the examination of the large number of rock-specimens obtained. The report in connection with the exploration and surveys of the area covered by the Nipissing and Temiscamingue sheets was completed and is now in the press.

The geological investigations carried on for several seasons past in Central Ontario by Dr. F. D. Adams and Mr. Barlow in collaboration, were continued during the past summer. These gentlemen were assisted, particularly in regard to the necessary measurements and topographical surveys, by Mr. J. Keele, Mr. G. W. Ross, jr., and Mr. F. G. Stevens.

Field-work by Messrs. Barlow and Adams.

The close association in which Messrs. Adams and Barlow have worked in the field, renders it appropriate that their progress report upon the work should be made jointly. In the following pages the observations of both gentlemen are therefore combined:—

"The work was pushed forward as rapidly as possible, but the geological boundaries are so intricate and the relations so critical and difficult, that part at least of another season will be required before a final report can be written. It was found necessary, in order that the structure of the district might be thoroughly worked out, to include in the area of survey a portion of the map-sheet to the south (No. 113) comprising parts of the townships of Burleigh, Methuen, Lake, Tudor and Grimsthorpe.

Topographical surveys.

"Re-surveys were made, by Mr. Barlow, of Loon Lake in Chandos township, Paudash Lake in Cardiff, Eel Lake on the boundary between Anstruther and Cardiff, and Bass Lake on the boundary between Limerick and Tudor. Mr. Keele made a survey of the Deer River from the outlet on Loon Lake, in Chandos, to Whetstone Lake, in the township of Lake, showing this crooked stream in detail, in a manner not attempted on the township plans.

"Besides this Mr. Keele made micrometer surveys of a group of lakes situated in the northern portion of Burleigh and the southern parts of Cavendish and Anstruther, including Long, Cox, Cold, Gold, Gull, Catchacoma, Bottle and Sucker lakes.

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“Mr. Barlow’s work, comprised the area composed chiefly of the granitic and dioritic gneisses, in the north-eastern part of the map from Egan Estate to Brudenell corner; while, in the southern part of the sheet, he worked chiefly in the district to the east of the Hastings road. Dr. Adams, with Whitney as a base, worked in the north-western part of the sheet, exploring and mapping geologically the townships to the west and south-west of Egan Estate station on the Ottawa Arnprior and Parry Sound Railway. Dr. Adams left Montreal for the field on June the 20th and returned on September 12th, while Mr. Barlow was engaged in field-work from June 25th to October 1st.

Area examined by Mr. Barlow.

“The great tract of country contained in the northern and north-western part of the map-sheet, exhibits a very typical development of the granites and gneisses of the Laurentian. The latter usually dip at low angles and are in some places quite flat, the strike running in great sweeping curves, often of considerable complexity. Three small outliers of the Grenville series were noticed on the shores of Barrys Bay of Lake Kaminiskeg, while two others occur between Hopeville and Emmett post-office in the south-western part of Hagarty township. In the vicinity of Rockingham and between this village and Brudenell corner, there is a large development of crystalline limestones belonging to the Grenville series and similar rocks may be encountered at frequent intervals between this place and Rochefort P.O., in the south-eastern corner of Hagarty. The Grenville series likewise occupies small patches in Monteagle and Carlow townships, but by far the greater part of these townships is underlain by the more massive granite and gneiss. A large irruptive mass, composed chiefly of granite, diorite and gabbro, covers the southern portions of Mayo and Dungannon and the northern parts of Cashel and Limerick, thence extending westward into the north-eastern corner of Wollaston. To the north, in the townships of Dungannon and Mayo, a large area of limestones and amphibolites occurs, cut through by a mass of intrusive material of both acid and basic facies. These rocks were formerly classified as belonging to the Hastings series, but certain portions present the highly metamorphosed character of the Grenville series. Similar rocks, some even in a less altered condition, are present to the south of these huge batholithic masses, covering the southern parts of the townships of Limerick and Cashel in the south-east corner of the sheet. At several places, notably in the vicinity of Gilmour station on the Central Ontario Railway and between this place and St. Ola station, detailed studies were made of the occurrence of certain ‘conglomerates,’ and the conclusions reached would seem to indicate that, in many instances at least, such rocks in these regions are not true conglomerates, but are

Fundamental gneisses.

Outliers of Grenville series.

Irruptive mass.

Examination of conglomerates.

of the nature of autoclastic rocks or dynamic breccias. These pseudo conglomerates as here represented, would appear, in fact, to have been formed by the rending apart of certain of the more brittle bands, while the inclosing limestone or schistose matrix has yielded somewhat readily to deformation. The subject is of rather exceptional scientific interest and a paper by Mr. Barlow, covering the observations made, has lately been presented at the meeting of the Geological Society of America.\*

Area examined by Dr. Adams.

“Dr. Adams, having completed his work on the north-west corner of the sheet on July 25th, left Whitney on that date and went south through the townships of Airy, Sabine, Nightingale, Bruton, Harcourt and Herschell to Baptiste Lake. Along this line an excellent opportunity was afforded for the study of the relations of the Fundamental gneiss to the great limestone-bearing formation known as the Grenville series, which appears in force on Baptiste Lake. On several lots on ranges IV. and V. of Bruton, a granular, white felspar rock was found, identical in appearance, and probably in composition, with the albite rock found associated with the nepheline-syenite in the township of Dungannon and elsewhere in the district about Bancroft, and which is there a differentiation product of the nepheline-syenite magma. No nepheline, however, could be detected in this Bruton rock. The first occurrences of limestone were found on the last range of the township of Harcourt. The occurrences of this rock, however, are small and disconnected, until the first ranges of this township are reached, when the limestones and the rocks of the Grenville series are seen almost continuously along the line of the Irondale, Bancroft and Ottawa Railway.

elspar rock.

Limestone.

Intrusive contacts.

“The study of this region, showed conclusively that the contact between the Fundamental gneisses and the Grenville series is an intrusive one, and that the rocks of the last-mentioned series, have slowly sagged down into, or have been gradually uplifted by an underlying floor or batholite of granitic material. The chief developments of the Grenville series, run in great curves around these batholites, and in contact with granite material its rocks become broken into many discontinuous patches, usually maintaining the strike of the adjacent part of the formation from which they have been detached; showing that the rending action of the granite has been a slow and gradual one, and not of the nature of a violent intrusion.

Detailed work on Grenville series.

“The month of August and the early part of September were occupied in making a detailed study of one of the most complicated portions of

\* Published in Ottawa Naturalist, vol. XII, No. 11, Feb., 1899, pp. 205-217, Plates VI-IX.

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the whole district, comprising the township of Monmouth and portions of Dudley, Cardiff, Chandos, Burleigh and Methuen. In Monmouth there is one of the best developments of the Grenville series in the whole area, while, in the other townships, there are in addition excellent exposures of the Fundamental gneisses with great granite intrusions, as well as occurrences which have been referred to the Hastings series, the geology of the district being of the most intricate character.

“The study of the Grenville series in Monmouth, showed beyond a <sup>Its results.</sup> doubt, that this series is a sedimentary one. It includes a great development of bedded white quartzites, evidently altered sandstones. The associated limestones also, that occur in heavy bands, and, as everywhere else in the Grenville series are in the form of white crystalline marbles, were in a few places along the line of the Irondale, Bancroft and Ottawa Railway, seen to hold little dark strings suggestive of remnants of the original limestone in a less altered condition. On this account, a careful search was made, which resulted in the <sup>Unaltered limestones.</sup> discovery of two localities in which the limestone was almost unaltered, being very fine in grain and blue in colour, and bearing a strong resemblance to the limestones of more recent formations. In such case the blue limestone is interstratified with the ordinary white coarse-grained marble of the Grenville series and passes into it, there being evidently portions of the limestones which have escaped metamorphism. These occurrences serve to dispose of any lingering doubts concerning the sedimentary origin of the limestone in question. The localities where these unaltered limestones are best seen are, lot 27 of range XIV. of Monmouth and lot 28 of range XI. of the same township.

“The relations of the Grenville and Hastings series in this district were made the subject of careful study, and much additional evidence bearing on this disputed question was collected during the summer.

“Several new occurrences of nepheline-syenite were discovered during <sup>Nepheline-syenite.</sup> the past season, in the district examined. The most noteworthy is that which was found in the form of a wide band running through the township of Monmouth. It is first seen near Wilberforce, and thence runs in a south-west direction, parallel to the I. B. & O. Railway, as far as lot 13 of range IX., where it bends back upon itself, and, passing a little to the west of Hotspur P.O., runs in a north-east direction for four miles. This band has been traced continuously for a distance of ten miles. It wraps around and forms a border to a large granite intrusion, often pegmatitic in character. To all appearance it is a differentiation-product of the granite magma. In fact, nearly all the <sup>Its relation to granite magma.</sup> occurrences of nepheline-syenite that have been found in the present sheet (No. 118) bear a similar relation to granite masses. Not to mention

the occurrences in the Bancroft district, described in a former report, there may be cited as example, an occurrence discovered last year on lot 26 of Faraday, on the line between ranges A and B. This occurrence, which is at least one hundred yards wide and holds sodalite, lies on the margin of the great mass of granite forming the northern half of the township of Faraday and between it and a great development of crystalline limestone in the western portion of the township. Another similar occurrence of nepheline-syenite was found on lot 15 of range I, of the township of Harcourt, and is well exposed in a cutting on the I. B. & O. Railway. It again occurs at the contact of the great mass of granitic rocks occupying the northern part of the township of Cardiff and the crystalline limestones of the Grenville series which sweep around it.

Further occurrences of nepheline-syenite.

“Still another great development of nepheline-syenite intimately associated with granite, is that composing the Blue Mountains, a long range of hills running north-east and south-west through ranges VI. to XII. of the township of Methuen. These rise from a great granite plain, and the petrographical associations are of extreme interest but require further study before they can be clearly made out.

“In addition to the band of nepheline-syenite above described, from Monmouth, there is also in the same township an isolated area of considerable size situated on lots 9, 10 and 11 of ranges VII. and VIII. where it breaks through the limestone of the Grenville series.

Association with corundum.

“The occurrence of nepheline-syenite in Methuen, referred to above, is of especial interest from an economic standpoint on account of the occurrence of considerable deposits of both muscovite and corundum in the pegmatite veins and coarse segregations occurring in it or in its immediate vicinity. In fact, corundum has been found so generally in connection with the nepheline-syenites occurring in the north-eastern portions of the sheet, that all the areas of this rock above mentioned are worthy of being very carefully searched for this mineral.

Economic minerals.

“A large number of mineral deposits occurring in the district examined were carefully investigated. These consisted of deposits of graphite, apatite, mica, corundum, iron-pyrites, molybdenite, etc.

Mica.

“The only deposit of mica that was being worked in the district examined, is situated on lot 7 of range XXII. of Cardiff, by the side of the I. B. & O. Railway track. This deposit is owned by Messrs. Best and Membry. A pit twenty feet square and eighteen feet deep had been made, and a considerable amount of mica, in sizes up to two feet by two feet and a half, had been extracted. The mica is dark in colour, and occurs in a mass of the granular green pyroxenite, so frequently found, as in this case, associated with the limestones of the



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Grenville series. Similar dark-coloured mica, in large sheets, has been discovered on lots 30 and 31 of range XIII. of Cardiff, as well as amber mica of good quality, but of smaller sizes, on lot 31 of range XII. of the same township. The mica deposits of Methuen, mentioned above, are, however, no longer worked. Work on the corundum deposits had also been suspended at the time these were visited.

“Fine specimens of molybdenite are to be obtained on range I. of Molybdenite. the township of Harcourt, at a point which is probably situated on lot 3. The country-rock is a granular green pyroxenite, which has been produced by the complete alteration of an isolated mass of limestone inclosed in the Fundamental gneiss. This pyroxenite is traversed by little strings of pyrite and molybdenite, associated in places with pyrrhotite, tourmaline, sphene and other minerals. A pit about fifteen feet deep, has been put down on the deposit by Mr. Gordon, of Toronto, and a considerable amount of pyrite, said to contain gold, has been raised, as well as a small amount of molybdenite.

“Samples of quartz collected from the Higman mine, on lot 9, con. <sup>Quartz veins.</sup> VII. of Limerick, assayed in the laboratory of the Survey, proved to contain no gold, and only 0.175 of an ounce of silver to the ton of 2000 lbs.

“Other samples collected from large irregular masses of quartz cutting crystalline limestone on lot 31, con. VI. of Cashel, were found to carry neither gold nor silver.”

### QUEBEC.

The winter of 1897-98 was spent by Dr. R. W. Ells in plotting and <sup>Work by Dr.</sup> compiling the notes of field-work of the preceding season, and in <sup>R. W. Ells.</sup> laying down the geological lines on map-sheets Nos. 119 and 120. Considerable time was also devoted to work upon a proposed special map of the Ottawa district. Dr. Ells' field-work, during the summer, was carried on partly in Ontario but chiefly in Quebec. Surveys and examinations were made within the area of map-sheets 119 and 120, now in course of compilation, for the purpose of completing the necessary information for these sheets. Dr. Ells was also requested to undertake the preparation of a general explanatory report to accompany the Three Rivers sheet, or north-west sheet of the series of four which has generally been referred to as the “Eastern Townships,” series. This involved the correlation of much work previously done by other members of the staff, and necessitated some further surveys and examinations for this purpose. The map-sheet is now in the

engraver's hands for completion. On his field-work, Dr. Ells reports as follows:—

Various surveys.

“Several weeks of May and June were spent in completing the examination of certain areas, lying to the south of the Bonnechère and Madawaska rivers in Ontario, and in correcting the surveys of the townships of Hull, Eardley and Onslow, in Quebec. On the 28th of June, I set out for the St. Maurice district, in order to complete if possible, the series of surveys which had been partly made in that area several years before by Messrs. Adams, McConnell, Giroux, Ord and Low, in connection with the geology of the north-west map-sheet of the ‘Eastern Townships’ series, the report on which, owing to various causes, had not been prepared for publication. A report on a portion of this area, embracing the south-west corner of the sheet, had, however, been published in 1895 by Dr. Adams, in connection with his report on the anorthosite masses of that district.

Work in St. Maurice district.

“In carrying out this scheme of work, after several days spent in the vicinity of Joliette, St. Gabriel de Brandon and the country to the north and east of that place, I left for the village of St. Michel des Saints, about sixty-five miles north. This place is situated on the upper part of the Matawin River, which is the principal tributary of the St. Maurice from the west.

Ascent of Post River.

“Here men were engaged, and early in July I began the ascent of the Post River which was followed up to its head in Lake Clear. Thence, by a portage of half a mile, the waters of Vermilion River were reached, and these were followed north to a further distance of twelve miles through a chain of lakes. The country in this direction was found to be generally nearly level, characterized by great areas of sand and gravel with but few rock-exposures. Clear Lake, at the head of the Post, is of large size, with generally sandy shores; the only rocks seen being grayish and reddish banded gneiss.

Rocks near Post River.

“Along the Post River also the shores show comparatively few rock-exposures, and these are of the upper or grayish, often rusty, gneiss series. About two miles below Clear Lake, a small band of crystalline limestone shows in the stream, and some scattered blocks extend for several miles below this place. On a small lake to the east (Jerome Lake), reached by a portage which is about one mile north of the forks of the Long Lake River, the gneiss, which is of the usual gray and reddish variety, and is cut by red granites, contains a broad belt of almost pure quartz. This band is white, with a breadth of at least fifty feet, and its lower portion, near the contact with the red granite, carries a quantity of black and broken crystals of mica. Masses of

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clear red felspar are distributed through the quartz. The mica is of no economic importance, although spoken of as a 'mine' by the hunters.

"Returning down the Post, the west branch, known as Long Lake River, was ascended to Lake Croche, the stream being in places very rough and the portages bad. From Lake Croche a portage of nearly a mile leads to Long Lake, and from the head of this lake, Lake Travers, the source of this stream, is reached. On Lake Croche, crystalline limestone occurs at several places along the east shore, but the prevailing rock is a reddish granite-gneiss, foliated, coarse-grained and rough-weathering. Along the stream below this lake large areas of reddish augen-gneiss with a well-defined foliation were seen.

"On the long stretch between this lake and the head of Lake Travers, much of the rock seen is a foliated red granite; but several outcrops along the upper portion of the route are of reddish-gray and gray garnetiferous mica-gneiss. Glacial striæ were noted at several points with a course of S. 10° W. About Lake Travers masses of red foliated gneiss occur. From the head of this lake a portage of three-fourths of a mile leads to Lake Sassiakinagog on the upper waters of the Manuan River where also grayish mica-gneiss, with black hornblende bands, appears, with a strike a few degrees east of north.

"Sassiakinagog Lake is eighty feet lower than Lake Travers. It is a large sheet of water with long arm-like bays. The prevailing rock is grayish and reddish-gray gneiss, but there is also a large development of grayish quartzite like that seen along certain parts of the Lower Ottawa. This rock extends along the north shore of the lake for several miles, and though several blocks of crystalline limestone were seen, no ledges of this rock were noted. Much of the shore is, however, low and without rock-exposures.

"Following Pasquatazebe Creek from the south-west end of this lake, we reached the height-of-land between the Manuan and the Matawin at the head of the north-east branch of the Milieu. The country along this stretch is generally low and the shores of the creek are swampy, only one outcrop of rusty quartzose gneiss being seen. The lake shores along the upper part, however, show many large boulders of reddish gneiss and granite.

"The Milieu flows, for most of its course, between low and sandy or bouldery banks, the upper portion of the valley is swampy and the stream is choked with thick alders. Heavy rapids are frequent and are often caused by boulders, of large size, but rock-ledges are not very numerous. Where seen these ledges are of gneiss of the usual Grenville type, sometimes with areas of gray quartzite. Though no

limestone was seen along the stream, several outcrops of this rock are found both to the east and west of this river, at a distance of ten to twelve miles from its mouth. These outcrops may be the extension of certain bands seen along, or in the vicinity of, the Matawin, below the village of St. Michel, and which there have a strike to the west of north, in the same association with rusty gneiss so frequent in the Grenville district. Along the lower part of this stream, not far from the limestone bands, there are several deposits of mica which in former years were mined to a slight extent, but have long been abandoned. Apatite also occurs with the mica, the containing rock being a greenish pyroxenite, as is the case in the Ottawa district. The lower part of this stream, flows through banks of sand for several miles till it enters the Matawin about eight miles below the village of St. Michel.

Upper Mat-  
tawin.

“The south branch of the Matawin or Cypress River was next ascended, to the head of Cypress Lake. This lake is about six miles in length and is bordered by high hills and ridges on the south and west, which separate its waters from those of L'Ouareau River and from the head of the L'Assomption River. Portages extend from the south end of this lake to both these places. The character of country in this direction is very much like that seen about Trembling Lake on the Rouge River. The rocks around Cypress Lake are for the most part grayish and reddish-gray gneiss, often garnetiferous, having a strike of N. 65° W. with a dip to the south-west. In places the gneiss is quite rusty, and quartzite also occurs, but no limestone was seen in this direction. A portage from the north-west angle of the lake leads across to Devil Lake on Devil River, which flows into the Rouge.

North-west  
branch of  
Matawin.

“The upper or north-west branch of the Matawin, above the Cypress branch, is formed by the confluence of two streams, each of which extends for about thirty miles northward, flowing generally through low and often swampy country. They are said by the hunters to show solid rock, the banks consisting for the most part of sand and gravel, with stretches of beaver-meadows, and they were therefore not followed. Descending the river again to St. Michel, traverses were made to lakes Trefle and Proteau and to the chain of lakes along the south-east border of the township of Provost. The same kind of grayish, often garnetiferous and quartzose gneiss, was observed on all these, and bands of impure limestone were noted on several of them. Mountain masses apparently of reddish foliated granite are seen in parts of this area. The gneiss strikes generally to the north-west and the dip is usually to the south-west. The rocks are in places much disturbed near the granite masses.

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“Surveys were made of the roads in the vicinity of the Matawin, Descend the Matawin. both to the east and west of St. Michel, after which I began the descent of the Matawin to the St. Maurice. In this traverse an examination was made, for the sake of comparison, of the rocks along the lower part of the Eagle River, on the north side, and further down, of the Antikagamak Lake and of Lake Wapizagonk on the headwaters of the Shawenigan River.

“Returning to the Matawin, we descended that river to the head of the Cinq Rapids, from which point a portage-route of about three miles leads across to the Cinq lakes. The Matawin below this point is very rough, with heavy rapids, so that it is very rarely traversed. This part was, however, surveyed by Mr. Ord in 1880, so that our section along this river is complete.

“The portage to the lower Cinq Lake is over a ridge of grayish, Cinq Lake. sometimes garnetiferous gneiss. Along the lake, good exposures are seen near its lower end and in the east bay. The rocks are grayish gneiss with a very low dip to the east, the angles being rarely more than five degrees. Several low undulations are seen and bands of a coarser red gneiss, as well as of black hornblende, appear on the east bay. This chain of lakes was followed south to its head, and a portage made to the head of the chain of the Fishing lakes, whence a Fishing lakes. route extends out to the St. Maurice at the village of Grandes Piles. These lakes are leased by the Laurentian Fishing Club, by which good portage-routes have been opened to a number of the surrounding lakes. In all these, however, there appears the same character in the rock-exposures. They are all gneiss of the upper or Grenville series, with occasional areas of granite. The dips are everywhere at low angles, but several anticlines traverse the district.

“Throughout all this Matawin country, with the exception of the Character of the country. small settlement near St. Michel, there is no means of communication except by canoe. The whole country is one unbroken wilderness, abounding in deer, caribou, moose and bears. Beavers are still numerous in most of the streams and the traces of their presence may be frequently seen in the shape of houses and dams. The whole district is densely wooded, though most of the growth is small, owing to a fire some years ago that swept off much of the timber along the course of the river for many miles.

“The geology of portions of this district, both to the north and south Geology. of the Matawin, had already been examined by Messrs. Giroux and Adams, and also in 1880 by Mr. Ord. On reaching Grandes Piles, it was my intention to make an examination of that part of the St.

Maurice extending thence up to the mouth of the Vermilion River, to see how far the gneisses of the Grenville series there run, but a severe attack of lumbago, contracted while descending the lower part of the Matawin, rendered further exploration in this direction impossible. The examination of the area to the east of the St. Maurice had, for the same reason, to be abandoned, but as this portion had been traversed by Mr. A. P. Low, in 1891, this will not be necessary, as his notes on this district are so full that the geological structure of the area can be readily understood.

Surveys made  
in the autumn.

“Returning to Ottawa, the remainder of the season in the field was devoted to the completion of the surveys in the townships west of the Gatineau, and along the north side of the Ottawa River. In this connection a further examination was made of the geology of Calumet Island, where important deposits of blende and galena have been mined for several years, and where a new deposit of nickeliferous pyrrhotite has been recently discovered.

“Further examinations were also made in the area to the south of the Rideau River, in Gloucester township, and a well-defined line of fault separating the Calciferous limestone from the Utica shales was located on lot 14, range IV. of that township. The beds of the former are there tilted up to an angle of 65° and certain portions of the strata in the vicinity are cleaved at right angles to the bedding.

“The surveys in the townships of Nepean, North Gower, Goulbourn and Marlborough were also carried on sufficiently to ascertain the geological structure of this area, and to connect the work of the previous season with the former surveys in the immediate vicinity of Ottawa. Several faults were found in this district, separating the Calciferous from the Trenton and Black River formations.

Results  
obtained in  
St. Maurice  
district.

“The results of the examinations in the St. Maurice district may be briefly summed up, preliminary to the general report on the area now being prepared. In character, the gneisses, quartzites and limestones are similar to those of the Ottawa district, and it would therefore appear that all the rocks from the Palæozoic of the St. Lawrence basin, northward for some distance beyond the northern limit of the map-sheet, belong to the Grenville series rather than to what has been called the Fundamental gneiss. With these, however, are associated masses of newer intrusive rocks, such as anorthosites, granites, syenite and augen-gneiss, some of which constitute areas of large extent and can be depicted on the map. In other cases such are the difficulties of access that the outlining of these masses must be largely conjectural.

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“The crystalline limestones have but a small development and occur at widely separated localities. Bands cannot be traced continuously from point to point for any considerable distance, as the outcrops are sometimes abruptly cut off by intrusions, or thin out of themselves. In places their tracing is prevented by the great expanse of sand and gravel drift. Certain of these reported bands of limestone can scarcely be regarded as other than calcite masses, which are a part of the pyroxene rock with which they are associated; and in this case are not an integral part of the gneiss and quartzite series. Those noted along the upper portion of the Matawin are, however, like the Grenville limestones. The largest development is in the township of Polette near the St. Maurice, where there is a reported breadth of from 200 to 400 yards, extending for several miles along the strike. East of this river true limestones are rarely seen, though the gneisses are of the same general character as in the area to the west of the river.

“The garnetiferous gneiss has a wide distribution. It can be recognized at all points in the area of the north-west map-sheet. It is associated with grayish and reddish-gray gneiss, and often with schistose bands, as is the case with the bands to the south of the Ottawa, in Renfrew county. The rocks lie in a series of low anticlines, the dips being generally from five to twenty degrees, though sometimes, in consequence of breaks or faults they become vertical. Owing, however, to the mantle of drift, these anticlines cannot be definitely traced for long distances. The banding of the gneiss, as in the Ottawa district, is north, varying a few degrees on either side.

“Economic minerals are apparently rare in this district, with the exception of the deposits of bog-iron ore, which are found at many widely separated points. The distribution of the principal deposits has already been noted in the summary report of Mr. Low for 1891. Along the upper part of the Matawin small quantities of mica and apatite are seen, but the quality and quantity are not such as at present to render their mining profitable. These deposits have been described in the summary report of Mr. Giroux for 1891-92.

“Small quartz veins are seen at many points in the gray gneiss and are supposed by the settlers to indicate gold. In all the cases examined, the only mineral seen was iron-pyrites, which is sometimes found in small quantity. On the upper part of the L'Assomption River, near the forks, bands of serpentine are associated with crystalline limestone, and these sometimes carry small veins of chrysotile, similar to those seen along the lower Ottawa. From the narrowness of the veins exhibited

as well as from the inaccessibility of the area where these occur, the economic importance of these deposits doubtful.

Limestone.

“Near St. Michel, some of the limestone bands are locally utilized for lime-burning. A deposit of ochre on the lower part of the Milieu, at the last rapid before reaching the Matawin, appears to be of good quality, but is too far from means of transport to be worked except for local purposes. The garnets in some of the gneiss bands in this area are remarkable, both for the large size of the crystals, some of these being fully an inch in diameter, and for their abundance.

Garnets.

“The general geological features of the greater portion of this area have already been described in the summary reports of Messrs. Low, Giroux and Adams and need not be further referred to in this place.

Mica.

“In the area along the lower Gatineau, mica mining has again been resumed. In the township of Wright, the mine opened some years ago by the Rev. Father Guay, of Gracefield, on lot 15, range II., which was closed for some time, has been reopened, and large quantities of mica of good quality are now being extracted. The pit in September, was down to a depth of forty-five feet, and the crystals were very abundant. They were distributed through a mass of grayish and pinkish calcite in a pyroxene rock which cuts the gray gneiss. About three and a half tons of mica per week were being taken out at the date of my visit.

“Along the river between the Pickanock and Aylwin, several other deposits of this mineral are now being worked. These are all in pyroxene-rock and the prospects are good for favourable returns, though the colour of the mica is in most cases very dark. There is a large development of pyroxene along the Gatineau in this area and mica deposits are numerous.

Mining at  
Calumet  
Island.

“The most important mining developments along the lower Ottawa, at present, are on Calumet Island. Here the old workings on the Lawn property, near the east end of the island, on blende and galena deposits, have been extended, and development work is now carried on over three lots on range IV. The containing rocks are largely dioritic, with some reddish granite, and these masses are intrusive through the gray gneiss and limestones. These latter are well exposed along the Roche Fendu channel of the Ottawa on the south side of this island. The principal workings at present are on what is known as the Bowie property, where a large open-cut has been made on an ore-body in the diorite, that carries both blende and galena. The ore-body is of considerable extent, but is pockety in its character, and no well-defined hanging or foot walls were seen, though the mass sends off spurs into the enclosing diorite. Over 1000 tons

Lead and zinc.



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of ore was mined at this place during the past summer, and the ore finds a ready sale in the European market. On the west part of the area a shaft has been sunk to a depth of nearly 130 feet, in order to cross-cut and intersect several masses of ore that appear at the surface in this vicinity, but work on this location was suspended during the season in order to fill orders from the Bowie pit. There is evidently a large quantity of mixed blende and galena ores in the intrusive rocks of this district, but in none of the openings examined was any well-defined vein structure noted, the ore everywhere appearing rather in pockety masses, though some of these are of large extent.

“About three miles to the north-west of this mining area, on lots 11 and 12, range IX., another interesting deposit of mineral has recently been opened on the property of Mr. E. P. Cowan. The ore here is different from that on the eastern end of the island, being mostly a pyrrhotite, which carries both nickel and cobalt. The associated rocks are diorites that cut a series of gray and rusty gneisses and crystalline limestones. A large knoll of the diorite rises to the south of the ore-bed, which has a thickness of about twelve feet, and between it and the diorite mass is a band of crystalline limestone. The ore itself is associated with another band of diorite that apparently traverses gray gneiss, the latter being seen beneath or to the north of the ore deposit. On the river a short distance to the south of this mine, the formation is mostly a crystalline limestone, and the intrusions of diorite and granite in this rock can be readily seen. The bed of pyrrhotite at the Cowan mine dips to the south at an angle of about 50°. A shaft has been sunk to a depth of about forty feet and cross-cuts has been made to test the thickness of the deposit. Nickeliferous  
pyrrhotite.

“Between this place and the Lawn property, there are several points at which mineral indications have been noted, but little attempt has as yet been made to ascertain their value.

“Mining for mica is also being carried on along the north side of the Ottawa between Bryson and Coulonge, to the north of Calumet Island, where several deposits of this mineral have been discovered. The work on these, however, is so far largely preliminary, and nothing definite as to the value of the properties can be here stated. In this area most of the mica is of the dark-coloured variety. Mica.

“The season's work extended from May 16th to Oct. 1st.”

Professor J. A. Dresser of St. Francis College, Richmond, Que., having offered to undertake a detailed investigation of Shefford Mountain, with a view to the presentation of a report on the petrography of the mountain to the Geological Survey, has, during the past summer, Work of Prof.  
J. A. Dresser.

been accorded some slight assistance in the prosecution of this work. Prof. Dresser had previously familiarized himself with the general features of the rocks of Shefford Mountain, and it appears probable that his further examinations will enable this isolated mountain mass to be described as a useful type, illustrating the structure and composition of other similar elevations of the St. Lawrence plain in Quebec. Professor Dresser contributes the following notes on the progress of his examination :—

Structure of  
Shefford  
Mountain.

“From a review of the work now done, it is clear that Shefford Mountain, as has long been known, is chiefly an igneous mass of later age than the surrounding sediments, which are much disturbed and altered at the contact. The latest of these sediments is the Farnham black slates (D 3a, G.S.C. map of 1896).

“The mountain itself and most of the later dykes in it, share in the general foliation of the region, viz. : that of the Appalachian system.

Relation of  
stratified to in-  
trusive rocks.

“The evidence is also very strong, if not conclusive, that the mountain is an uncovered laccolite, rather than a volcanic neck. The sedimentary rocks dip away from the igneous on all sides at high angles, showing an arching rather than a breaking-through of the sedimentary rocks.

“Patches of stratified rock frequently overlies the igneous rocks. Such are lithologically similar to the other sedimentary rocks of the district. One of these is an area of slate, at least a quarter of a mile in extent and probably a hundred feet in thickness, and overlies a part of the two latest rocks in the mountain. It forms a sort of cap on the highest peak of the mountain, is altered at its contact with the underlying igneous rocks, and is cut by dykes from each of them. Also, on the leeward side of the course of the chief glaciation, the sedimentary strata still stand leaning against the igneous rock to a height of 1000 feet (by aneroid) above the base of the mountain and about 200 feet lower than the overlying slate just mentioned.

Denudation

“The amount of the denudation of the sedimentary rocks over the surrounding plain, must have been very great, at least 1000 to 1200 feet of their thickness having been removed. A small lake, half way up the north-west side of the mountain is of glacial origin.

Various  
igneous rocks.

“The igneous rocks are of at least three different ages of intrusion, besides later dykes of two or else three different ages :—

1. A rock of the gabbro family.
2. A syenite, having varying characteristics.
3. A kind of porphyrite.

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“The relative ages of these rocks can be clearly seen at numerous contacts which are well exposed. Also, large numbers of dykes of each of the later rocks are found cutting the preceding one or ones.

“There is also a mica-syenite which is cut by Nos. 2 and 3, but I did not ascertain its relation to No. 1. It may form a fourth number of the series.

“No tufaceous or amygdaloidal rocks could be found.

“None of those rocks show any near relation to a collection made on Mt. Orford two years ago between Eastman and Miletta, a section mentioned by Dr. Ells.

“The later dykes which cut both mountains may be more alike. Those in Shefford Mountain appear to be two kinds. They seem to correspond more or less closely to the dykes of Lake Champlain described by Prof. Kemp and others in publications of the United States Geological Survey.”

During the winter of 1897-98 Mr. R. Chalmers was engaged in completing for publication a general report, embracing the detailed work of three seasons, on the surface geology and auriferous deposits of south-eastern Quebec. This report is now in press and will shortly be issued, accompanied by a map showing the gold-bearing belts of the region.

Work by Mr. R. Chalmers in Quebec.

On field-work carried on in Quebec, Mr. Chalmers reports as follows:—

“In accordance with your instructions I left Ottawa on the 6th of June and proceeded to the county of Portneuf, in the province of Quebec, to examine and report on a very remarkable landslide which had occurred there during the previous month. Mr. J. Keele, of the Geological Survey, was sent with me to photograph some features of this landslide, and a survey of the pit or chasm caused by it was also made.

Examination of landslip in Portneuf.

“The landslide referred to took place in the parish of St. Thuribe, on the east bank of River Blanche, a tributary of the Ste. Anne, at a point about three miles north of the village of St. Casimir. We reached the spot on the 7th of June and set about collecting all the information we could concerning the catastrophe. Mr. Keele made a paced survey of the area of the landslide and took more than a dozen photographs at points selected by me. The depth of the pit below the general surface of the terrace in which the *débâcle* occurred was likewise measured and the gradient of the bottom approximately ascertained by aneroid readings taken at different points. Mr. Keele returned to Ottawa on the 10th of June,

while I remained a day or two longer to examine some features of the locality and also to visit the scene of another remarkable landslide which occurred on the Ste. Anne River, north of St. Albans, about seven miles above St. Thuribe, on the 27th of April, 1894. After this I proceeded to Quebec.

Character of  
the landslip.

“The River Blanche landslide, according to the reports of the farmers and others living in the vicinity who witnessed it, took place on the morning of the 7th of May, 1898, between half-past five and nine o'clock. These people, as they arose and looked out were terror-stricken to behold the earth moving from under them, not *en masse*, but piece by piece, and floating off in a stream of semi-liquid mud towards a gap in the river's bank through which it passed into the valley of the Blanche. The river-valley is here bordered by terraces of Leda clay and Saxicava sand, which, previous to the landslide, stood from twenty-five to thirty-five or forty feet above the river-bed. In about three hours or three hours and a-half, a portion of the terrace eighty-six acres in extent and from eighteen to twenty-five feet in depth was thus broken down and the larger part of it swept through the narrow opening referred to into the valley, filling it up nearly to the level of the bottom of the pit from which the material came. It seemed as if there had been a reservoir of soft clay here in a flowing state, which, breaking through the border of the basin enclosing it at the point of least resistance discharged into the valley of River Blanche in the manner described, carrying with it, for greater or less distances, the upper and more coherent clay in masses of various shapes and dimensions. These masses appeared to have split off vertically from the walls of the pit as the lower part slid away from beneath, and frequently exhibited a columnar structure. The larger, which were irregularly pyramidal in form, occasionally became stranded, and presented abraded and striated sides from the passage of other clay blocks. In these stranded masses the strata were observed to be still in a horizontal attitude. The smaller masses were borne into the valley by the torrent of mud. The number of clay blocks, great and small, irregularly distributed in the pit, gave it the appearance of a wilderness of mounds, cones and pyramids; while the quantity of material (chiefly Leda clay) discharged into the valley of the Blanche was found to occupy it for a distance of nearly two miles to a depth varying from ten to twenty-five feet.

Its effects.

“In the destruction caused by the landslide one child, a little daughter of Phileas Douville, lost her life, portions of two farms were ruined, two dwelling-houses, a school-house, two barns and a number of outbuildings were buried in the *débris*, and a large number of logs that lay in the Blanche were covered up by the clay and sand.

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“As this singular phenomenon has been personally investigated and described in detail by Dr. G. M. Dawson in a paper read before the Geological Society of America, at the meeting held in New York, on December 28th to 30th, 1898, it is unnecessary for me to say anything further concerning it here.

“The landslide that occurred near St. Albans, four years previously, was somewhat different from that of River Blanche. At the first-mentioned place, the clay and sand moved directly off the west bank of the Ste. Anne into the valley and diverted the river from its former course. The length of this slide was about three miles and a-half, the width about one mile, and the depth ranged from ten feet in some places at the upper part to two hundred and fifty feet along the river. Soon after it took place Messrs. P. S. Archibald and W. B. Mackenzie, of the Intercolonial Railway Engineers' Office, Moncton, N.B., visited the locality, and made a survey of it. Mr. Archibald very kindly sent me copies of his plans, and a brief report of his observations. Mgr. Laflamme, of Laval University, Quebec, also made a survey and detailed examination of this landslide and read a paper concerning it before the Royal Society of Canada, illustrated by a map and diagrams\*.

Landslip at  
St. Albans.

“This catastrophic and apparently little known form of denudation has called attention to the fact that the landslides above described are not altogether new in the St. Lawrence valley. A pit produced by one of these was noted by Dr. Dawson, immediately to the north of that of St. Thuribe, the approximate area of which is given on the plan of that landslide. Sir W. E. Logan also recorded the occurrence of one which took place on the bank of Maskinongé River on the 4th of April, 1840, in a paper read before the Geological Society of London†. It seems that a mass of sand and clay covering an area of about eighty-four acres was moved to a depth of nearly thirty feet, piece by piece endwise, through a narrow opening into the river-valley there also in about three hours. From Logan's survey of this slide, during the autumn after it occurred, and his description in the paper cited, it must have resembled that of River Blanche very closely.

Observations  
by Sir W. E.  
Logan.

“After the investigation of the landslides at River Blanche and St. Albans, I proceeded to the south side of the St. Lawrence valley to level the Pleistocene shore-lines there, commencing at Lévis and vicinity and going westward. The elevations of these had previously been ascertained approximately by aneroid; but it was considered desirable that at certain points, where they were well-defined, levellings with a

Heights of  
terraces.

\* Trans. Royal Society of Canada. Vol. XII., 1894. Sec. IV. pp. 63-70.

† Proceedings of the Geol. Soc. of London. Vol. III, 1838-1842, pp. 767-69.

spirit-level from the nearest railway stations should be undertaken. Work of this kind was begun at St. Anseime Mountain, fifteen miles south-east of Lévis, and continued westward as far as Shefford Mountain at West Shefford station, Canadian Pacific Railway, interrupted a good deal, however, towards the end of June by wet weather. A few days were then spent at Dudswell in a re-examination of the gold-bearing rocks of that place and in securing samples for an assay and mill test.

## HUDSON BAY.

Work by Mr.  
A. P. Low.

After the first pages of this report were ready for press, a letter was received from Mr. A. P. Low announcing his safe arrival at Great Whale River, giving the main results of his explorations during the past summer and outlining his plans for the coming season. It is thus possible to include the essential parts of this interesting communication, from which it appears that Mr. Low has been able to make very important additions to our geographical and geological knowledge of the east coast of Hudson Bay. Mr. Low writes as follows:—

Difficulties  
encountered.

Shoal coast.

Consequent  
delays.

“ I am happy to state that my party have been in good health and that we have had a successful season, although not doing as much work as I had intended, owing to the continuous bad weather during September, when we had a succession of gales from all points of the compass. Another cause of delay was the unexpectedly shallow water found everywhere along the coast from within a few miles of Cape Wolstenholme to Portland Promontory. This stretch of coast resembles that of the east coast of James Bay, being very low, almost flat and fringed with small islands, with shallow water and a very uneven bottom extending several miles off shore. The islands and shoals are largely formed of boulders (morainic material) which appear to have been shoved up into sharp lumps by the grounding of heavy ice in the shallow water. We ran aground several times even when sailing slowly with a good look-out, and it was only good luck that prevented serious consequences on two occasions, when we were aground for several hours and only got clear by removing the cargo and ballast, as the tide rises so little that it is practically useless to depend upon it to float the yacht. Owing to the above causes we did not reach Portland Promontory until the 9th of September, when I considered it too late in the season to attempt the exploration of the outer islands, and in this I was right, as the weather continued very stormy for the next three weeks, and it is doubtful if we would ever have arrived here had we gone to the northern islands,

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which I have since learned are nearly all low and largely formed of drift material, without harbours and surrounded by shallow water and shoals, resembling the coast to the northward. Instead of going to the islands we continued the log-survey down the coast to Great Whale River, and, as you may see from the accompanying reduction of the survey, have made some additions to the previous track-survey of this part of the coast.

“As I wrote you, Capt. Gray of the *Erik* thought it better to land us near Cape Wolstenholme rather than at Port Laperriere, and as the conditions were favourable I agreed with him, so, on the morning of August 1st the *Erik* came to anchor near the head of a small bay just east of Cape Wolstenholme and remained there until evening, allowing us to rig and load the yacht, which had been put overboard the previous evening and towed behind the steamer. The following day, while the men were completing the rigging, etc., Young and I were engaged in making observations for latitude and longitude, and also in examining the country and rocks in the vicinity. The coast about here is high, rising abruptly from 800 to 1000 feet above the sea and then more gradually inland to a general elevation of about 1500 feet, being on top a succession of low, rounded, glaciated hills. Terraces occur on the flanks of the hills more than 700 feet above the present sea-level. There were considerable patches of snow everywhere, but most of it was old, as the spring had been early and hot, and so nearly all the previous winter's snow had already melted. While climbing the hills I shot two barren-ground caribou, thus giving us a supply of fresh meet to begin with. These animals are very numerous about here and along the coast for about fifty miles to the southward of Cape Wolstenholme, and we frequently saw small herds along the land-wash as we passed in the yacht. Beyond this they are not common along the coast, but occur plentifully some miles inland all the way southward to the wooded country near the Nastapoka River. The Eskimo leave the coast early in August, going inland to kill deer for food and winter clothing, and remain in the interior until December, when they slowly make their way southward to Great Whale River, trapping foxes as they move along.

Work begun at cape Wolstenholme.

High land near the cape.

Caribou.

“On the 3rd of August, we sailed past Cape Wolstenholme, but only got to a small cove about four miles beyond, owing to light winds. The channel between the mainland and the eastern Digges Island is less than two miles wide; the tide sets strongly through it, and there was considerable loose ice floating about when we passed”.

Round the cape.

“Wolstenholme terminates in a small point about 200 feet high, immediately backed by jagged perpendicular cliffs composed largely of

Character of the point.

Guillemots. rusty-weathering dark mica-gneiss, on edge. The cliffs are about 1000 feet high, and are full of crevices where the murre (Brunnick's guillemot) breed in tens of thousands; each bird lays a single egg on a narrow ledge, over which it straddles, and we could approach within ten feet without disturbing them. The noise of the birds' wings when a gun was fired was like heavy thunder, and the first time I fired I dodged behind a mass of rock, thinking that the report had dislodged a large piece of the cliff above. These birds also breed in great numbers on Digges, but were not seen to the southward; I think that they do not leave Hudson Bay, for the Eskimo say great numbers pass the winter in the open water outside the outer islands.

"The perpendicular strata of dark, schistose mica-gneiss (Grenville series) often contain much disseminated pyrite, and some beds are graphitic, but there is no limestone. These rocks are cut by masses of pink and red mica-gneiss and mica-hornblende-gneiss which is intruded into the darker gneisses.

Eskimos. The next two days were quite calm and we remained at anchor, making excursions inland and examining the brooks for possible traces of gold, but without success. While here we were visited by seven Eskimos in kayaks and I engaged one as guide to the first river to the southward. They are encamped in the same place, Nuyuk, where Dr. Bell visited them, some fifteen miles west of Wolstenholme.

"On the 5th we picked up our guide and made about five miles more, when the ice gradually closed and forced us into a little cove where we remained ice-bound until the 8th, when the wind set the ice off the coast and we had no more bother with it, the last being seen on the 10th.

Lower land to the south. "The coast where we were ice-bound is much lower than about Wolstenholme, the cliffs have totally disappeared, and the land rises gently from the shore into rounded hills (200-500 feet) composed largely of drift, with rock showing only on the summits and points. Beyond this, to within a few miles of Cape Smith, the coast and country in rear are very low with few rock-exposures; these being nearly all granitic gneiss with broken bands of schistose mica-gneiss and of altered basic irruptives. At Cape Smith and along the north side of Mosquito Bay, a range of high hills reaches the coast from the north-east. These hills on the coast vary from 500 to 800 feet, but inland rise above 1000 feet.

Trap hills They are formed of trap, usually fine-grained and frequently having large cavities filled with calcite and quartz, and sometimes short irregular veins of these minerals. In places the rock is a fine-textured



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green diabase, weathering to a rusty-brown. It is nearly everywhere jointed in such a manner as to give the mass a rough basaltic structure, by dividing it into rude, irregular prisms, which are inclined at all angles to the horizontal. In many places the outsides of these prisms are altered to a depth from one to three inches into a dark-green crystalline mineral like hornblende. Along certain lines, especially near a contact with the granite, which is of later date, a schistose structure is developed in the trap. This has flattened and lengthened the prisms, drawing them out into bands and producing schist like Huronian schists, with the dark and light bands formed from the altered outsides and cores respectively of the prisms; while other quartzose bands, holding calcite, are formed from the masses of those minerals already mentioned. I saw this change in all stages in several places on the coast, and it seems to me probable that many of the light and dark banded Huronian schists found so commonly throughout Canada have a like origin and are not true pyroclastic rocks. Metamorphism of trap.

The hilly country does not extend further than the north side of Mosquito Bay, to the southward of which the coast again becomes very low and is fringed with many islands to Portland Promontory, where highlands again occur. From Portland Promontory to Great Whale River, the coast is bold and rocky, rising in rather sharp irregular hills from 500 to 1200 feet high. These are formed largely of red granitic gneiss, holding numerous large fragments of light-gray quartzose mica-gneiss. The rocks of the coast between Mosquito Bay and Portland Promontory, are also largely granites, holding, in places, broken bands and masses of rusty-weathering and very quartzose mica-gneisses; and along with these in several places, notably near Thompson Harbour, Puvungituk River and Portland Promontory, large masses of dark and banded basic schists (altered traps), gabbro and diabase. Low county south of Mosquito Bay.

"The unaltered clastic rocks and traps are first seen on the outer islands at Portland Promontory, where the inner islands are formed largely of the same rocks metamorphosed and jumbled up by the intrusion of granite. The Hopewell and Manitounuck Islands are capped with trap, while the Nastapoka chain is without trap and its rocks are probably higher in the series than those of the islands north and south of it. The unaltered rocks occur on the mainland about five miles south of the Nastapoka River and continue to within five miles of Great Whale River. Along Manitounuck Sound, there is an unconformity, or rather, the lower beds are wanting, limestones resting upon the granites; but in several places I found masses of arkose, coarse sandstone and silicious limestone enclosed in and un- Unaltered rocks first seen.  
Junction with granites.

doubtedly older than the granite. These included rocks belong to the lower members of the unaltered series as shown in my section at Castle Peninsula, Richmond Gulf, and consequently, as on Ungava Bay, the so-called Cambrian is older than the granite rocks here and to the northward \* \* \*

Great deposits of iron ores. On all the islands of the Nastapoka chain, I found great thicknesses of magnetite and magnetite-hæmatite ores, associated with jasper and similar to those discovered on the Hamilton and Ungava rivers. In places, beds of rich ore were seen more than 40 feet in thickness and the amount of iron here is incalculable. There is also a good deal of silicious ankerite, which, as stated in Dr. Bell's report, contains large percentages of manganese. The magnetite occurs in thinner bands along with ankerite in the Hopewell Islands, but on the Manitounuck Islands there is very little ore. In the areas of altered traps and other schistose basic rocks to the northward of Portland Promontory, pyrite and pyrrhotite are common, the latter ore in large masses occasionally. These masses of pyrrhotite may contain gold or nickel, as they usually occur close to large granite intrusions.

Other minerals.

“Quartz veins are also often numerous in these localities, and may prove a source of gold, although I saw no free gold in any of them during my hurried examinations.

Glaciation. “These are the principal points of interest in relation to the geology of the region, and it remains only to state that the country was entirely glaciated, with the ice-flow everywhere outwards to the sea, or a little to the north of west. The drift brought down by the glacier-ice forms a great part of the shoals and islands extending for several miles off the coast, and from information obtained from the Eskimos, it would appear that a line of morainic islands extend southward from the neighbourhood of Portland Promontory nearly to Nastapoka River. These islands lie forty or fifty miles off the coast, and may be similar to those of James Bay.

Terraces. “The post-glacial, or later glacial subsidence along the coast, exceeded 700 feet, and, consequently, a large amount of the present northern land was then under water, leaving the highlands of Cape Wolstenholme and Cape Smith as strings of islands. In a number of places I saw fine examples of striæ produced by floating ice, differing from glacier striæ, in seldom being more than a few feet long, generally curved, and crossing one another at various angles.

Rivers. “Owing to the want of a guide along this low and broken coast, it was only with considerable difficulty that we found the mouths of any of the rivers, and thus we missed those of the Koghaluk, Puvungituk

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and Tuchuchutuk, although we tried to find that of the first-named, and entered bays that must have been close to it on both sides. The Eskimos say the Koghaluk is the largest river on the coast. If it is greater than the Sorehead, it is indeed a large river, as the latter is much larger than Great Whale River. The other rivers are not large or important.

“ Considerable attention was given by me to the fisheries of the bay <sup>Fisheries.</sup> and the following notes on these may be of value.

“ I carefully enquired about the common salmon from the Eskimos <sup>Salmon.</sup> at Cape Wolstenholme and others to the southward. None of them had ever seen this fish, and, consequently, it may be taken that it does not enter the strait much further than the west shore of Ungava Bay.

“ Hearne’s salmon is probably the most important food fish of Hudson <sup>Hearne’s salmon.</sup> Bay. It is very plentiful along the northern coast from Cape Wolstenholme to Cape Jones, and is especially abundant in the mouths of the northern rivers, where with our small nets we several times took more than thirty fish in a night. They vary in weight from three to fifteen pounds, a good average being six pounds. I have no doubt that this fish would be very valuable if the bay were accessible by railway, as it is not only very plentiful but is much superior in flavour and colour to the lake-trout.

“ Sea-trout are common along the coast, especially to the southward <sup>Trout.</sup> of Cape Jones, where they are caught in nets in shallow water between the islands, along with small whitefish. Both species enter the rivers in September and ascend them to deposit their eggs. The trout rarely weigh five pounds and do not average three pounds.

“ As previously stated in my reports, whitefish are caught along with <sup>Whitefish.</sup> the trout in James Bay and are common along the coast to Hudson Strait. In the northern part, they are larger than in James Bay and were nearly always taken in our nets with Hearne’s salmon, when they weighed from three pounds to six pounds.

“ I am now certain that cod is not only found in Hudson Bay but <sup>Cod.</sup> that it remains in these waters throughout the year, as I have learned that the Eskimos, along the coast between Great Whale River and Portland Promontory, and those living on the outer islands, make a practice of catching these fish through the ice throughout the winter. The Eskimos of Wolstenholme knew the cod, but rarely fished for them. Those at Mosquito Bay often caught them on hooks, and while anchored at Cape Smith we caught two fish about thirty inches long which my men (Nova Scotia fishermen) pronounced true cod.

“The shallow water and sandy bottom off the coast to the northward of Portland Promontory are not favourable for cod, but the deeper water and rocky bottoms along-shore to the southward of that place and as far as Cape Jones, together with the rocky inner and outer islands and banks, are ideal places for cod, and they are commonly taken by the Eskimos in these places.

Bait. “There is a good supply of bait, or food, for the cod, in the caplin, which are often thrown up along the coast. We also took ‘lance’ in the dredge, together with many sea-urchins, star-fish, crabs, etc., in fact everything that is found on the Labrador coast, except the squid.

Importance of fishery not known. “Although I do not know the extent of the fishing grounds or abundance of the cod in Hudson Bay, and had no means of determining these points, our boat being too small for fishery work, I think that the knowledge of their presence in considerable numbers throughout the year, points to a practically inland fishery, and is of so great value that these facts should be brought to the attention of the proper authorities, so that an early and complete investigation may be made, with a suitable vessel, of this perhaps important fishery. There is no reason why, in the deeper waters of the bay, halibut may not also be found, although I can hear nothing of this fish from the Eskimos.

“Herring is unknown to the Eskimos, and consequently may be assumed not to occur in Hudson Bay. The only other salt water fishes are two species of sculpin, and small lump-fish, etc., of no economic value.

Seals. “I do not think that the seal fishery of Hudson Bay will be of commercial importance, although there are plenty of seals along the coast; for, as they never congregate in large numbers to pup, like the harp and hood seals off Newfoundland, the killing of these animals will be left, as at present, to the Eskimos.

Walrus. “The walrus is not now very abundant, and ivory sufficient for shoeing dog-sleds is difficult to obtain for the Eskimos. I learn that on the outer islands of the North Belchers there are a few ‘rookeries’ where small herds of walrus remain during the summer, and where they are seldom disturbed by the natives. I hope to know personally about these next summer.

White whale. “The white whale or ‘porpoise’ frequents the mouths of the large northern rivers in considerable numbers, and there might, for a time, be carried on profitable fisheries for these animals; but the experience of the Hudson’s Bay Co. and others is against a permanent, successful porpoise fishery, as after a few captures they will not enter the rivers.

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“ Bone whales are practically unknown to the Eskimos of this coast, and what whalebone they may have has been obtained from Eskimos to the northward of Hudson Strait.

“ The Eskimos report that the rivers and numerous large lakes of the barren grounds contain quantities of brook-trout and lake-trout, arctic salmon-trout and whitefish. Fresh-water fish.

“ Mr. Young has made a large and nearly complete collection of plants. We have also a number of butterflies and other insects, as well as some marine animals obtained by dredging. Meteorological observations have been regularly kept since August 1st, including the surface temperature of the water. Collections.

“ We arrived at Great Whale River post on the 25th of September, and were kindly received by Mr. Gillies who placed two rooms in his house at our disposal, and furnished quarters for the men in the servants' house. Mr. Gillies is also assisting us in procuring dogs, guides, etc., for our spring work. Proceedings at Great Whale River.

“ Our first care on arriving was the proper housing of the yacht in winter quarters, and we soon had her dismantled and hauled out alongside the Company's craft on a low bank about half a mile above the post. The men were then set to work to make two sleds, before cold weather, and when these were finished, they spent the remainder of October in chopping fire-wood. Early in November I sent Lantz and Ford a few miles to the southward to hunt, as fresh meat is a very scarce article here, and we live largely on salt and tinned meat owing to the scarcity of ptarmigan, hares or deer. Mr. Young has been busy plotting his surveys of the past season, keeping weather observations and other work incidental to the trip. I have developed all the photographs taken and they have turned out satisfactorily on the whole, being better than those of any other season. \* \* \*

“ I will now try to give you a short sketch of my present plans in regard to future work. It was intended that the party in the spring should go inland from here and explore the country to the eastward. With such an object in view I wrote to Mr. Gillies to provide Indians along our possible route with nets, so that they might lay up stores of fish for our use as dog-food and also kill deer for the same purpose. The Indians would not take the nets and said that the deer also could not be depended on; consequently, I have no dog-food inland, and cannot, therefore, make any extended stay in that part of the country. Plans for further work.

“ As this must be abandoned, I have, after consulting Mr. Gillies and the Eskimos, determined to divide the party, sending Mr. Original plans modified.

Young to the Belcher Islands and going myself northward along the coast some distance past the mouth of the Nastapoka River and then inland about 100 miles to a very large lake, called Eskimo Seal Lake, to explore the country about there on the edge of the barren-grounds. On both these trips seals can be obtained to feed the dogs, while on the coast, and inland, the Eskimo say that sufficient caribou may be killed to keep the dogs going. We shall probably start about March 1st, as previous to that date the short days and extreme cold make dog travelling very slow and disagreeable, and the amount of work done would be inconsiderable and very expensive. The mail packet also does not arrive here until the end of February, and as that will be our first news from home since leaving, eight months before, we naturally want our letters before going off. I expect to be absent until early in April, and Young will probably be away about the same time.

Exploration  
of Great  
Whale River.

“On our return, when the travelling on the coast ought to be good, I propose taking the united party inland up this river, and we may be able to go a considerable distance up the main river and perhaps to cross to Little Whale River and descend it to the coast, but this will depend on the information which I may get from Indians expected here after New Year. Travelling on snow and ice is practically over by the 15th of May, and we will then turn our attention to outfitting the yacht for next summer's work. The ice usually leaves the river about the last of May, but it is always two weeks later before the coast is clear of ice, and often the ice does not go sufficiently for boat work until much later. If the season is at all favourable, I propose to go northward along the coast to Richmond Gulf, and then to sail out to the North Belchers and make a survey of them and of the outer islands of the South Belchers, which cannot be reached by Young in the winter owing to the ice not setting fast. We will probably finish with the islands late in July, when we will return here and then proceed southward, carrying on the log-survey. On arriving at Paint Hills and Cape Hope, as extended an examination of the Huronian rocks as possible will be made, and we will leave in time to arrive at Moose early in September, so as to be able to send out specimens, etc., by the Hudson's Bay Co.'s ship, and also to escape the heavy gales always due in the first half of that month.

Work after  
opening of  
navigation.

“If the ice hangs heavily on this coast until July, I do not think it advisable to try to explore the outer islands in our lightly-built craft, and so, instead of waiting longer for it to clear, we will leave early in July for the southward, where the time may be profitably spent on the Huronian areas. These are my intentions at present, but plans

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may have to be changed in consequence of various circumstances—for one thing, there may be no dogs, as a large number died last winter and the disease may come again. In this case I will go inland without them as we did on the Hamilton River.

“Before closing I wish to state that Mr. Young and the other members of my party have been most diligent and efficient in the discharge of their duties.”

### NEW BRUNSWICK.

The following account is given by Mr. Chalmers of his field-work in, New Brunswick, in the later part of the summer :—

“On the 29th of June, I left Ottawa for New Brunswick, to resume the survey and examination of the surface geology of that province, especially of the quarter-sheet map No. 1, N.W., which includes the principal part of York, and smaller portions of Sunbury and Carleton counties. The survey of the area embraced in this sheet was begun in 1893 and continued in 1894, and it was now proposed to complete it. Mr. W. J. Wilson, of the Geological Survey, joined me early in August, and the remaining summer months were spent in this work, namely, in mapping the superficial formations and forest-covered areas, measuring the heights of the hills, lakes, etc., by aneroid or spirit-level, and in studying the different kinds of superficial formations which characterize the district.

Work in New Brunswick by Mr. Chalmers.

“The surface geology of this portion of the province, although affording nothing new, was found nevertheless to possess many interesting details. From the extent of country cleared of forest, better facilities are afforded for examining its surface deposits than in most other parts of the province. The most striking natural feature of western New Brunswick is the valley of the St. John River. This and some of the valleys of the larger tributaries, trench this otherwise plateau-like district in such a manner that, except in the Carboniferous area, few horizontal or base-levelled surfaces are to be seen. Evidences of dislocations and uplifts, with probably correlative subsidences, and in some instances apparent tilting of blocks of the land, within times geologically recent, appear to be found. These changes have in some instances affected the present drainage lines and have obliterated old ones. Numerous facts in regard to subærial denudation, the origin of lake-basins, the transportation and disposition of the materials constituting terraces, kames and other forms in which the thick beds of sand and gravel found here occur, were observed. These terraces and kames are especially noteworthy on

Valley of St. John River.

the west side of the St. John, though the valleys of the Keswick and Nackawicac on the east side, exhibit thick beds of modified gravel and sand much denuded. Well developed terraces in the tidal part of the St. John, show former water-lines considerably higher than the river-floods of the present day reach; but whether these are of fresh water or marine origin has not yet been fully determined.

Lakes. "Many beautiful lakes are found scattered over the areas of pre-Carboniferous and granite rocks in western New Brunswick, that diversify the scenery and give a pleasing effect to the landscape. Usually the larger lakes occur in groups, as, for example, the Cheput-necticook, Eel and Magaguadavic lakes. The basins of several former lakes were also found, notably at Brockaway settlement in the Magaguadavic valley, at Canterbury station and in other places.

The Grand Falls. "As much interest attaches to the Grand Falls of the St. John, and as some uncertainty exists in regard to the measurements of the height above sea-level formerly made, it was thought advisable, when we were in the vicinity, to connect the upper and lower basins, so-called, with the height of the Canadian Pacific Railway station there by a series of levellings. Two or three days were spent in this work, and from the measurements effected, the upper basin was found to be 417 feet above mean tide-level, and the lower basin 300 feet, according to the September height of the river, the season of the year when it is generally lowest.

Height of  
river above  
the falls.

"In the North-east Boundary Survey, under the direction of Major J. D. Graham, one of the United States commissioners, to whom was assigned the survey of the line from Passamaquoddy Bay to the highlands that divide the waters which flow into the Atlantic Ocean from those flowing into the St. Lawrence, 'a line of levels, with two spirit-levels checking each other, was carried from mean tide at Calais, Maine, to the monument at the source of the St. Croix River. Thence it was run along the true meridian to the intersection with the River St. John, the surface of which at this point was found to be 419.2 feet above the level of mean tide at Calais. The basin of the river immediately above the Grand Falls may be stated as of the same height, in round numbers, (although two miles and a-half further down stream) as there is very little current between these two points.'

"It thus appears that the elevation of the upper basin of the Grand Falls, as based on the Canadian Pacific Railway levels, is very nearly the same as that obtained by Major Graham, the difference not being greater than may be due to the seasonal fluctuations of the river's level.



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“The British Commissioners on the North-east Boundary Survey, Messrs. Featherstonhaugh and Mudge, from an elaborate series of barometric levellings based on the tidal portion of the St. John River, arrived at different results, finding the height of the upper basin of the Grand Falls to be only 296·75 feet above the sea. And from this point as a base, Mr. Wightman measured the altitudes of a number of mountains and lakes between the Upper St. John and the Baie des Chaleurs with the barometer. A list of these is given in Hind’s Preliminary Report,\* but it is believed they are all too low.

“In seeking base-levels from which to measure altitudes with our aneroids, we had sometimes to make use of the tidal portion of the St. John River between Indiantown and the head of the tide above Fredericton, and the actual height of its surface with reference to high-tide or mean-tide in the Bay of Fundy, therefore, became an important question. Attempts were made to ascertain this by levelling from the Canadian Pacific Railway to certain points; but the results thus far obtained are incomplete owing to causes unnecessary to detail. Nevertheless, they serve to show that the level of this portion of the river is remarkably inconstant, rising and falling with the non-tidal portion above tide-head, and that it is but little affected by the tides. At the lowest stages of the river in autumn and mid-winter, there seems to be a hydrographic depression there at high-tides in the Bay of Fundy, the surface being then below that level. Owing to the narrowness of the St. John at the falls near the mouth, only a limited quantity of sea water can flow in at high-tides; consequently the interior basin, or depression referred to, is raised only a few inches (about sixteen inches at Indiantown and five at Fredericton†) before the ebb sets in. But the reason why this portion of the river falls below the level of high-tides seems to lie mainly in the fact that there is a greater out-flow than inflow at these tidal falls. For example, the flow inward commences about two hours and a-half before high-tides, and continues two hours and a-half after. The time for vessels to go through the falls is given in the almanacs as follows:—‘The falls are level, or it is still water at about three hours and a-half on the flood, and at about two and a-half on the ebb. Much depends on the floods in the St. John River, and the time of high-water, or full sea, which is often hastened by high southerly winds.’ ‡Between every two successive high-tides, therefore, the flow outwards lasts fully seven hours, while

Search for datum points.

Tidal slopes on St. John River.

\*A Preliminary Report on the Geology of New Brunswick, etc. By H. Y. Hind. M. A., 1865, pp. 22-32.

†Tidal Phenomena of the St. John River. Bull. Nat. Hist. Soc. of N.B. No. XV, 1897. Prof. A. Wilmer Duff, M. A.

‡I am indebted to Mr. S. W. Kain, of St. John, for information on this question.

the inflow continues only about five hours. At neap-tides the inflow is still less and the outflow correspondingly greater. This discharge from the tidal basin of the St. John, unless compensated by an equal or greater inflow from the non-tidal part above, brings about a general lowering, during the seasons mentioned, to a level below that of high-tides in the Bay of Fundy. The height and attitude of the water-surface in this portion of the river, it thus appears, are dependent upon several interrelated and complex conditions. Generally speaking, it may be stated that it oscillates between the high-tide and mean-tide levels of the Bay of Fundy. At the railway bridge, Fredericton, the autumn level of the St. John at high-tide was found to be one foot nine inches (1.77 ft.) lower than that of the same tide in St. John Harbour, the distance between these two points being eighty-five miles. At Westfield Beach, twelve miles from St. John, it was found to be approximately six feet and a-half (6.60 feet) lower. These figures are subject to correction, the levels used being those of the Canadian Pacific Railway. They indicate, however, a gentle incline in the surface of the St. John at and below Fredericton, but how far down river has not been ascertained.

Complex relations.

Character of surface of country.

“The agricultural condition of the country is of much interest and a number of excellent farming tracts are included within the limits of the map-sheet referred to. The valley of the St. John is especially noteworthy in this regard, a considerable width of alluvial soil being found on each side of the river. Good tracts of arable uplands were also noted in York and Carleton counties, and many of the farmers are in prosperous circumstances. A large extent of the country embraced in this sheet is still forest-clad, though portions of it have been swept by conflagrations. Lumbering is, however, still an important industry, and wherever these fires have not destroyed the woods entirely, the younger or second growth of trees is rapidly taking the place of those cut away in the ordinary lumbering operations. It is observed, however, that the spruce logs are becoming somewhat smaller than formerly; but the conservative regulations adopted by the provincial government relative thereto, will, doubtless, afford such protection to the younger forest growth as to ensure its yield for commercial purposes for generations to come.

Discovery of Silurian fossils.

“Before closing work for the season, Mr. Wilson, while engaged in mapping some forest areas and surface deposits along the St. Andrews and Woodstock branch of the Canadian Pacific Railway, was fortunate enough to discover fossils about six miles from Canterbury station, in the belt of rocks lying north-west of the granite area in western York. I thought it best while we were in the vicinity to make a

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collection, and accordingly a few days were spent in doing so. The fossils when submitted to Dr. H. M. Ami, were pronounced by him to be Silurian, though the rocks in which they occur have hitherto been classified as Cambro-Silurian.

“The rocks in which the fossils were found consist of partially altered, gray slates, with certain shaly bands, and dip N. 20° W. 80°. A wide belt of somewhat similar strata, closely conformable, and in nearly vertical attitude, is exposed in cuttings along the railway-track here. About half a mile south-east of the fossil bed a reverse dip comes in, and dark pyritous, highly altered bands are interstratified with the gray slaty rocks. No fossils were detected in these.

“The fossils seem to have been subjected to great stresses, many of them being flattened and stretched out or otherwise distorted in a remarkable manner, showing the effects of the pressure more than the rocks containing them do. It was observed, however, that the slaty cleavage and bedding approximately coincide, and the question arose whether it is not to this fact that the extremely distorted condition of the fossils is due—that is, to the fact that the shearing and lines of flow have been always at right angles to each other. Further investigation is, however, required to elucidate this question. Distortion of fossils.

“Following is a preliminary list of the fossils as determined by Dr. Ami:—

“Crinoidal columns and fragments belonging to at least two distinct species. *Orthis* (*Rhipidomella*), sp., compare *Rhipidomella oblata*, Hall from the Lower Helderberg of New York State and Canada. *Orthis*, sp. indt. smaller than preceding but with coarser and less numerous costæ. *Leptaena rhomboidalis*, Wilckens, *Strophomena* or *Streptorhynchus*, species undetermined. *Spirifer*, sp., two distinct forms at least present. *Pterinea textilis*, var., an example showing characteristic sculpture of this uppermost Silurian species. Forms determined.

“The season's work closed on the 25th of October.

“In the New Brunswick work Mr. Wilson gave me important and valuable assistance, some portions of it having been carried on independently by him.”

“Professor L. W. Bailey was again employed in field-work in New Brunswick. Some of the observations made have been incorporated in his report on the mineral resources of the province, shortly to be issued, other data obtained will be reserved for a later report on cer- Work by Prof. L. W. Bailey.

tain features in the geology of New Brunswick. The following is Professor Bailey's account of his operations during the summer :—

“According to your instructions received in June last, these investigations were mainly directed to two objects, viz. : (1) the obtaining of any additional data which might be available, bearing upon the question of the mineral resources of the province, and, (2) the more definite determination, if possible, of the age and relations of the great bands of slaty rocks that traverse the central portions of New Brunswick on either side of the central granite belt.

Further investigation of minerals.

“(1.) The information of an economic character thus obtained, being supplementary to that collected in the previous year, a report upon which has already been submitted, it has been thought well to take advantage of a delay in the printing of the latter to incorporate therein all additional matter available, as has now been done. This matter relates more particularly to the gypsum deposits of Albert county, various quarries of building-stone, the Albert shales, clays for brick-making, sands, mineral paints, etc. The report referred to, as thus amended, is now passing through the press.

New facts relating to coal deposits.

“In connection with this branch of inquiry, considerable attention was devoted to the consideration of the occurrence of coal in New Brunswick, increased interest in this direction having been awakened through the results of borings undertaken at various points. Among these that of Dunsinane, in Kings county, is especially interesting as revealing a thickness of the coal-formation at this point, (over 1300 feet,) which was entirely unsuspected and which makes it possible, at least, that the hitherto accepted view that the coal-formation of New Brunswick is very shallow may be erroneous. As bearing further upon this subject, visits were made to various parts of the Carboniferous area, especially about Moncton, Buctouche, Chatham, Caraquette and the Miramichi River, with a view to obtaining new data for a general discussion of the whole subject. As this discussion was too lengthy for incorporation in the report mentioned above and will be based to some extent upon a critical examination of the cores from borings, not yet available, it is proposed that it shall form a portion of a separate report, in connection with the discussion of the topic next to be referred to.

Examination of slate belt.

“(2.) In the study of the slates and associated rocks of central New Brunswick the discovery of fossils was considered to be of primary importance. Hence a large amount of time was devoted to this object, an amount, unfortunately, quite out of proportion to the results. In particular, it was hoped that something might be obtained by a systematic search along those portions of the North-west and South-

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west Miramichi rivers and of the Nashwaak River that are bordered by these rocks ; but on reaching these streams at the points to be studied, the extremely low state of the water was found to be such as to make their navigation wholly impracticable. Resort was then had to the St. John River and its numerous minor tributaries in York and Carleton counties, the fossiliferous beds of the Beccaguimic River being first examined, and a study then made of the fine section, exclusive of the granite almost continuous for forty miles, between the last-named stream and Fredericton. No remains of distinctly organic origin were found ; but the discovery on the main river, above the mouth of the Shesgomoc Stream, of calcareous strata, which, though metamorphosed and non-fossiliferous, cannot well be other than the equivalents of the fossil-bearing limestones of the Beccaguimic, will serve to make much clearer the geology of this part of the province and to give a wider basis for the discussion of the age of its contained formations.

“The discussion in question will form a second division of the next report, and will include the results of the study of the Beccaguimic fossils, already forwarded to the office of the survey. Further details to be given.”

“The time devoted to the above work was three months.”

### NOVA SCOTIA.

Mr. H. Fletcher was engaged during the winter of 1897-98 in plotting the surveys made in Cumberland county referred to in the Summary Report for 1897, (pp. 99 to 100,) and in revising those made by his assistant, Mr. M. H. McLeod, in connection with the preparation of several sheets of the geological map of Nova Scotia. He also made sections based upon a re-examination of the upper portion of Logan's section from Shulie to Two Rivers for comparison with the rocks of the south side of the basin. Work by Mr. H. Fletcher.

On the 16th of June, he left Ottawa for field-work in Nova Scotia, and did not return to Ottawa until January 8th, 1899. On this work he reports as follows :—

“ I was again assisted by Mr. McLeod, who was detailed to make the surveys necessary to complete map-sheets 59 and 60. The rocks examined by him are chiefly those which overlie the Coal Measures, and would thus, according to Dr. Selwyn's classification of 1881, be called Permian or Upper Carboniferous. They have been mapped as Permo-Carboniferous by Dr. Ells, who has included with them most of the rocks at one time called Triassic in Prince Edward Island. They are spread out in a syncline, the axis of which extends almost due west from the mouth of French River, and which has been already Field-work by Mr. McLeod.”

described as crossing Tatamagouche River and River John. From Malagash Point an anticline, running parallel, brings rocks of the Carboniferous limestone series from beneath the former—both series resting unconformably upon the igneous and metamorphic rocks of the New Annan and Baxter mountains, Tatamagouche Mountain and other portions of the Cobequid Hills, the contact being in places complicated by faults.

Springhill  
coal-field.

“ My own work was confined principally to the district adjacent to the Springhill coal-field, and to a closer study of the faults and folds affecting the Coal Measures there, in which I was again efficiently assisted by Mr. G. W. McCarthy, who was with me by the kind permission of Mr. J. R. Cowans, and traced, by means of bore-holes and trial-pits, the lowest seams worked at Springhill mines to a distance of more than two miles and a-half beyond the point to which they were proved by the late Mr. Scott Barlow and Mr. John Anderson.\* I have also to thank Messrs. George Hall, Ben. Parsons, John Murray, C. Hargreaves, Arthur Alloway, Harvey Howard, William Conway, and other officials of the Cumberland Railway and Coal Company, and the owners of the land on which this work was done, among others, Messrs. Wesley Herrit, Fred Jones, Alfred Smith, Rufus and Levi Gilroy, Thomas Boss and Mrs. Stephen Herrit.

“ The details are not of such a nature that they can at once be presented, but the general results may be briefly stated.

“ So much has been already written about the Springhill coal-field, that reference need be made only to modifications resulting from an extension of the underground workings and the proving of the outcrops of the coal-seams to the south-eastward.

Seams  
worked.

“ The three seams at present mined at Springhill are called, in descending order, the North Slope or Thirteen Foot seam of Barlow's reports† the East Slope seam and the West Slope, Eleven-foot or Black seam. The workings of the Syndicate or South Slope are on the North seam,‡ those of the Aberdeen or No. 5 Slope, on the West seam. The North Slope has been sunk past the 3200-foot level, without diminution, I am informed, in the size and quality of the coal, while the 1900-foot level has been extended to a point about seven chains across the Athol road, thirty-nine chains west of Miller's corner, far beyond the fault once supposed to determine the western boundary of the coal-field, which may indicate that the overlap of the upper rocks is here upon the Productive Measures rather than upon

\*Reports of Progress, Geol. Surv. Can., 1873-74 p. 156 and 1875-76 p. 346.

†Report of Progress, Geol. Surv. Can., 1873-74, p. 154.

‡Trans. Can. Soc. of Civil Engineers, vol. II., p. 404.

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the Millstone Grit. The continuation of this slope, a line of surface-pits in that direction, or the tracing of some of the uppermost seams will solve this doubt.

“The great fault running south from Stewart meadow, with Faults. which this is connected on the map of 1885, seems not to pass the railway from ‘the Lower Carboniferous outlier,’ but instead to turn nearly at right angles to the eastward towards Saltsprings and perhaps to join the Black River fault. The fault, stated by Dr. Ellis, on the authority of a former manager, to terminate the coals against the limestone, was subsequently shown to be of minor importance, by the connection of the underground workings on the West Slope seam with those of the Aberdeen Slope, which were continued far past it; the coal at the face being still, it is said, seven feet thick and of good quality. The extension of the lower levels in this direction is likely to prove this corner of the field, while a tunnel, now being driven across the strata from the West Slope seam, will test the underlying seams, some of which have been to a small extent worked.

“The 2600-foot level, already driven 2700 feet south-westward from the North Slope, follows a small fault or roll, which is perhaps a prolongation of that which skirts Coalmine Brook for a quarter of a mile the present crossing of the railway to Parrsborough.\*

“About fifty feet to the eastward of the last pit mentioned by Mr. Seams traced. Barlow, on the West Slope seam, † another was sunk eighteen feet, to the seam, which below that point showed the following section:—

	Ft.	In.
Top coal . . . . .	2	2
Shaly coal and black shale . . . . .	0	6
Coal . . . . .	0	9
Shale . . . . .	0	1
Coal, in part soft and shaly . . . . .	2	10
Stone, mixed with coal . . . . .	1	0
Under water and not well seen . . . . .	3	0
	10	4

“It does not appear that either the top or bottom was exposed in this pit. From it the coal was closely traced to the Herrit road, on the east side of which a bore-hole passed through fourteen feet and a-half of coal and shale; while, about three chains to the southward, a seam was found in the proper relative position for the East Slope seam

\* Annual Report, Geol. Surv. Can., vol. I (N.S.), p. 31, line 24.

† Report of Progress, Geol. Surv. Can., 1875-76, p. 346.

Jones Brook. "On Jones Brook, about a quarter of a mile further east, these two seams were again found the uppermost containing about eight feet three inches of excellent coal, with two partings of shale each about three inches thick, while the coal in the thick lower seam appears to have improved.

Hill's pits. "Half a mile east of the Herrit road, pits were sunk in 1865 by an American company, which is stated to have expended \$20,000 in testing their claims and to have succeeded in proving at least two workable seams of coal of good thickness. These belong also to the Springhill series, as inferred by Messrs. Woodhouse and Jeffcock in their report, and are no doubt identical with the above. Both were bored through by us, and a considerable thickness of strata was also tested both above and below, after which the lowermost seam was traced to the eastward, and proved to be that opened at McCarthy's slope, near the point at which (Report for 1873-74, page 159) two seams were said to have been found by Mr. Probert. The uppermost seam was not, however, opened by us hereabout. A gray, massive sandstone, containing concretions of coherent, calcareous, brown-weathering, ringed, fine sandstone, that lies between the two seams, appears in blocks associated with drift coal at a large spring a quarter of a mile east of McCarthy's slope, or more than a mile from the Herrit road, indicating no doubt the proximity of the coal, which was not, however, tested.

Smith Brook. "An outcrop of this sandstone, about half a mile further to the eastward, led to the discovery of coal on the north side of Smith Brook, where the upper part of the lower seam was pierced in a bore-hole as follows:—

	Ft.	In.
Surface.....	8	0
Gray sandy shale.....	3	0
Gray argillaceous shale, with harder layers.....	5	0
Coal with thin partings.....	3	3
Shale or slaty coal.....	0	3
Good coal.....	1	8
Shale.....	0	2
Good coal.....	1	5
Gray shale.....	0	4
Good coal.....	3	1
Greenish coherent underclay.....		
	26	2
	26	2



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“In an adjoining hill the pavement of an overlying seam was exposed, which may represent the East Slope seam, but was not tested.

“The next openings lie nearly half a mile to the south-eastward, along the north bank of Sugarwood Brook, a tributary of the South Branch of Black River. Here the first bore-hole passed through about eighteen feet of coal, with several thin partings of shale, while further down the brook the following section was cut through and bored :—

	Ft.	In.
Gray sandy shale. . . . .	1	8
Coal, with two small partings. . . . .	1	7
Clay. . . . .	0	4
Coal and coaly shale. . . . .	1	1

(This upper portion of the seam does not appear in the borings to the westward.)

Soft clay. . . . .	0	4
Bluish-gray argillaceous shale. . . . .	3	10
Coal. . . . .	0	7
Dark argillaceous shale with <i>Stigmara</i> . . . . .	1	0
Coal. . . . .	0	1
Coaly shale and coal. . . . .	0	5
Good coal. . . . .	1	9
Gray shale. . . . .	0	8

(The above section is exposed in a pit. The following strata were bored through.)

Coal. . . . .	1	5
Shale. . . . .	0	11
Coal. . . . .	3	9
Gray shale. . . . .	2	1
Coal. . . . .	2	1
Shale. . . . .	1	4
Soft coal. . . . .	2	7
Dark-gray soft underclay. . . . .	3	0
	30	6
	30	6

Sections in  
adjacent pits.

“In the immediate vicinity of the foregoing sections, a great difference is found in the strata overlying the top coal. In three adjacent pits, only a few feet apart, the section is as follows :

## No. 1.

	Ft.	In.
Gray shaly sandstone with concretions. . . . .	13	0
Gray conglomerate and coarse grit. . . . .	6	0
Gray flaggy sandstone. . . . .	3	2
Gray pea- and nut-conglomerate, containing large pieces of greenish argillaceous shale and fragments of coal. . . . .	3	0
Broken rock, perhaps conglomerate but doubtful, possibly crushed down over the coal. . . . .	3	6

## No. 2.

Greenish-gray very fine sandstone in thick beds . . . . .	10	6
Gray or dark argillaceous shale. . . . .	3	4
Greenish-gray or drab very fine sandstone or arenaceous shale. . . . .	1	2
Gray and yellowish argillaceous shale. . . . .	0	9

(The above section is that in the pit. It is continued by boring as follows.)

Coal. . . . .	1	6
Shale. . . . .	0	2
Coal. . . . .	1	8
Dark shale. . . . .	1	7
Coal. . . . .	0	4
Dark shale. . . . .	0	8
Coal. . . . .	0	7
Shale. . . . .	0	3
Coal. . . . .	0	6
Shale. . . . .	0	11
Coal. . . . .	1	7

## No. 3.

Gray banded sandstone. . . . .	2	3
Dark-gray coarse grit and conglomerate. . . . .	2	3
Gray and dark-gray coherent sandstone with <i>Calamites</i> . . . . .	1	6
Gray pea-conglomerate. . . . .	2	8
Gray, thick-bedded, striped sandstone full of carbonized plants. . . . .	3	9
Dark-brownish and gray, coaly, crumbling, fine grit. . . . .	1	0
Gray argillaceous shale. . . . .	0	9
Coal. . . . .	—	—

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“In pit No. 2 the upper part of the coal seam appears to be wanting.

“In a fourth pit the rock was greatly broken and the top of the coal was again wanting. This irregularity and replacement of the finer rocks above the coal, in so short a distance, suggests a possible overlap or unconformity. But where this might have been determined, the coal-seam meets a fault, running south-westerly along Sugarwood Brook, by which it is thrown about 350 feet to the north-eastward. Its crop was again traced about 270 feet, to another small fault, at which the thrust seems to be to the south-westward. At a distance of about 600 feet south-east of the brook the following section was obtained by boring:

	Ft.	In.	
Sand and clay . . . . .	4	0	
Drift coal, not found to the dip. . . . .	3	2	
Gray argillaceous shale . . . . .	0	10	
Conglomerate . . . . .	1	10	
Gray sandstone of fine grindstone grit . . . . .	2	10	
Dark blackish argillaceous shale . . . . .	0	5	
Light-gray soft argillaceous shale . . . . .	3	3	
Good coal . . . . .	1	6	
Dark shale . . . . .	0	3	
Coal . . . . .	0	5	
Shale . . . . .	0	3	
Coal . . . . .	0	4	
Shale . . . . .	0	7	
Coal. (This may be the top coal of the foregoing section) . . . . .	0	5	
Soft shale . . . . .	0	8	
Gray argillaceous shale . . . . .	2	5	
Coal . . . . .	0	3	
Black shale and coal in thin layers . . . . .	2	0	
Good coal . . . . .	0	9	
Shale . . . . .	2	8	
Good coal . . . . .	4	6	
Shale . . . . .	0	5	
Good coal . . . . .	1	9	
Shale . . . . .	0	6	
Coal and coaly shale . . . . .	1	7	
Shale . . . . .	0	6	
Coal with three one-inch hard bands . . . . .	2	4	
Shale . . . . .	0	6	
Good coal . . . . .	1	6	
Shale . . . . .	1	3	
Coal . . . . .	3	4	
Gray shale, somewhat hard, with a little coal . . . . .	1	0	
	48	0	
	48	0	

Section in fourth pit.

Section determined by boring.

Sections only approximate.

“These sections, cut by a hand-drill, must be taken as merely approximate and subject to correction, but they serve to show the general structure of the seam. Some good layers of coal were exposed at various points by shallow pits. The season was too wet for sinking a shaft necessary to prove the whole thickness of this seam, and, the ground becoming covered with snow, work had to be discontinued before the seam was found further to the south-east. Had it been possible to prove about 2100 feet south of the above bore-hole, the relation of the thick coal seam to a conglomerate (shown on Mr. Barlow’s map of 1874 as running from a point near the fork of the roads at Tom Boss’ south-westerly down the Maccan River with a north-westerly dip), might have been made plain. This conglomerate I am at present disposed to regard as above the workable coals.

Coal beneath the west slope seam.

“A bore-hole near the head of Sugarwood Brook, cut a twelve-foot seam of coal and shale in alternate layers, which probably underlies the foregoing; while about 850 feet down-stream from the last opening on the latter, nine feet and a-half of similar alternations, probably overlie; neither seam being workable. In the main South Branch of Black River, half a mile above the bridge at Tom Boss’, a small seam of coal with a very low south-westerly dip seems to overlie all the foregoing. All the rocks of this vicinity are nearly horizontal,

Claremont anticline.

“From the above description of the trend of the coals at the Herrit road, it may be inferred that an anticline passes near this point, a prolongation of that of Claremont toward Mapleton. Some work was done where this line crosses the Leamington and Old Mountain roads, but more will be required before the precise relation of Barlow’s highest coal-seam, traced by him to the Athol road past the furthest underground levels, to the small coals of Harrison Brook, the Old Mountain road and the deep bore-hole at Mapleton can be defined.

Rocks above and below Coal Measures.

“The rocks overlying and underlying the Coal Measures between Thompson and Westchester, and towards Rodney and Southampton, have also been, to some extent, studied, in an attempt to harmonize the various views held in regard to the different groups of rocks, the similarity of which in mineral composition and fossil contents has led to their being often confounded. Some attention was also paid to tracing the Black River fault,\* well seen in the river at Keiver’s bridge, about a mile further down stream, and at the mouth of Johnston Brook.

Examinations made with Dr. Ami.

“Two or three days were spent with Dr. Ami at Harrington and Moose rivers, examining the rocks compared with the Devonian of

\* Report of Progress, Geol. Surv. Can., 1873-74, p. 168.

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New Brunswick by Dr. Ells\*, which Dr. Ami, on the evidence of the fossils, now correlates with the Riversdale and Horton series, and calls Carboniferous. It must, however, be remembered, that the Horton has been stated by Sir J. W. Dawson to be equivalent to several groups that by some geologists are regarded as Devonian.

“In the course of last season I visited several places in which mining developments of supposed economic importance had been made. Economic minerals.

“At one of these, in Lowe Brook, about a mile above the pumping station, some two miles from Amherst towards Salem, a seam of coal, six to eight inches thick, in three layers and for the most part good, was uncovered among gray and drab argillaceous shales and sandstones containing fossil fern-fronds two inches long. Coal near Amherst.

“The manganese deposit in the same neighbourhood was again worked last season, and a small quantity of good ore was extracted.† Manganese.

“In November, I examined a portion of the line of the railway now under construction from Windsor to Truro, along which petroleum was reported to have been found. On the part constructed between Windsor and Mosherville, only a few masses of marl, gypsum and limestone were encountered, the cuttings showing chiefly masses of sand, clay and gravel with boulders.

“In October, by your instructions, I went with Mr. C. A. Meissner, manager of the Londonderry iron mines, to Whycocomagh, to note the developments made by him on the iron ore of the brook that flows through the Indian Reserve. The associated rocks of this district are described in the Report for 1882-84, pages 34 H and 91 H. The present workings lie about half a mile above those formerly opened, and the ore may follow the course of the stream, as indicated by a band of quartzite. A tunnel driven into the west bank, high above the stream, cut quartz and quartzite, succeeded by about seven feet of hard red hæmatite and rock in layers of from two to four inches in thickness, after which comes nine feet of ore, partly specular iron and partly hæmatite, with an occasional admixture of fine-grained magnetite. The average of this nine-foot band is said to be fifty per cent of metallic iron. It contains about five-tenths per cent of phosphorus, ten to fourteen per cent of silica, and a variable quantity of sulphur. In the front of the vein a good deal of pyrite was found, while the back part which contains the solid ore has little sulphur. Another tunnel, eighty feet below the first, went through twenty feet of limestone, dark-green slaty rock eighty feet, then ten feet of dark quartzite; but, at last accounts had not cut the ore. Whycocomagh iron ores.

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\*Annual Reports Geol. Surv. Can., (N. S.), vol. I., p. 51 E, and vol. V, p. 69 F.  
†Summary Report, Geol. Surv. Can., 1897, p. 101.

Search for  
old. "Other openings have been made in this mountain which exposed iron ores more or less promising. At the same time a visit was made to the pits, sluices, etc., on the brook at the head of Whycocomagh Bay, where search had been made for gold, and where a tunnel, 130 feet long, had been driven from the brook through the pre-Cambrian rocks. All work had been discontinued before the date of my visit.

Mines at  
Cheticamp. "The Cheticamp Gold Mining Company began active operations on the 28th of April last, on a mixture of sulphides, principally galena in large lenticular masses, in the pre-Cambrian slates of Faribault Brook. A good road has been built from the settlement, nearly three miles distant, to the deposit. Shafts have been begun and a considerable quantity of ore has been extracted. A concentrating plant capable of treating fifty tons of ore a day, a forge, workshop, boarding-house and two or three miners' houses are being erected. At the time of my visit about fifty men were employed, and the company is said to have expended \$30,000.

Loch Lomond. "On January the 4th, 1899, I visited, with Mr. J. A. Gillies, M.P., a deposit of galena and chalcopryrite found to contain silver and gold, in rocks of the same age about a quarter of a mile east of the middle lake at Loch Lomond, in Richmond county. The ore is in a quartz vein four feet and a-half thick, exposed in a pit fourteen feet deep and twelve long, and said to have been cut at some distance both ways from the pit. The vein is of some promise, but too little work has been done to determine its value.

Coal of  
Cochran Lake. "A small quantity of good coal was taken by Mr. E. W. Moseley, from a shaft eighteen feet deep to the top of the seam, about 500 feet to the eastward of the pits sunk by his father, the late E. T. Moseley, of Sydney, south of Cochran Lake.\* An attempt made to open this seam in the neighbourhood of Loon Lake was frustrated by quicksand found to a depth of twenty-seven feet in the pit."

Work by Mr.  
E. R. Faribault. The greater part of last winter's office work was devoted by Mr. E. R. Faribault to the completion of the large scale plans of the gold-mining districts surveyed the previous summer in the county of Guysborough and in the eastern part of the county of Halifax, and described in last year's Summary Report. Ten of these plans were prepared for the engraver and their reproduction attended to. The plans of Golden-ville, Salmon River, Moose River and Mooseland were printed on the scale of 250 feet to one inch and those of Oldham, Caribou, Killag, Fifteen-mile Stream, Forest Hill and Upper Seal Harbour on the scale

Plans of gold  
districts  
published.

\* Summary Report, Geol. Surv. Can., 1897, p. 102<sup>1</sup>

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of 500 feet to one inch. Some time was also occupied in the study of the geological structure of these districts, in order to define the richest auriferous zones and the relation of these to the different parts of the anticlinal folds, and to determine their extension beyond the present developments to greater depths.

Some progress was also made in compiling the one-mile to an inch map-sheets of the country lying immediately north-east of Halifax, completing for publication the Shubenacadie sheet (No. 56) and the Lawrencetown sheet (No. 53.) The first black proof of the former sheet has been received from the engraver and corrected, and the latter sheet is now ready to be engraved. The first black proofs of the Eastville sheet (No. 48) and Upper Musquodoboit sheet (No. 49) have also been received and corrected, and the Moose River sheet (No. 50) has been printed. Progress of map-sheets.

Progress was also made in collecting notes to complete the general report on the gold fields of eastern Nova Scotia.

On the work accomplished in the field during the past summer, Mr. Faribault reports as follows :— Field-work in 1898.

“ In compliance with your letter of instructions, I left Ottawa on the 11th of June to complete the mapping and study of the structural geology of the gold-bearing belt lying to the east of Halifax, in order to prepare for publication the map-sheets covering that area, and to make special plans of the principal gold districts not already surveyed in that region.

“ I was again assisted in the field, during the season, by Messrs. A. Cameron and J. McG. Cruickshank, who have been my assistants continuously since 1885 and 1887, respectively. I have to thank many gentlemen for information, assistance and hospitality, and I wish to mention especially Messrs. Edwin Gilpin, Inspector of Mines, and T. R. Gue of Halifax, A. A. Hayward and D. C. Wilson of Waverley, G. J. Partington and John H. Anderson of Musquodoboit Harbour, and J. H. Townsend and John Murphy of Tangier. Assistants.

“ Doubtful points to the east and north of Halifax, have been re-examined and some of the anticlinal folds and boundaries of the black slate belts have been located with more accuracy, in order to determine the most important faults. Re-examination of country east and north of Halifax.

“ The Montague anticline was traced westward to Brady's farm on the Waverley road, to the west of which it is cut by an important fault running north through the Waverley chain of lakes. The fault has shoved the Montague anticline 7000 feet to the north, two-thirds of the way up the west side of Lake Charles, where it was located and

- traced westward about Taylor's Lake and to Navy Island in Bedford Basin, where it appears to form a broad dome with an east and a west pitch, characteristic of a gold-district. Rich float quartz was discovered last year along this anticline in the cuttings of the Dartmouth Railway Branch, north of Burnside, and a large block of areas has been taken up under lease or prospecting licenses.
- Gold at Burn-  
side on dome  
of Montague  
anticline.
- Faults. "An important fault has been located at the head of Porters Lake, and traced north-east through Dollar Lake; and another parallel fault was determined one mile south-east of Oldham and traced to Soldier Lake.
- Auriferous  
veins at  
Karney Lake. "An anticlinal fold runs N. 28° W. (*mag.*) along the middle of Karney Lake and forms a broad elliptical dome extending north from the outlet of the lake to the Hammond Plains dome. Several corrugated interbedded veins have been observed along this belt and gold is reported to have been found on the east side of the lake.
- Auriferous  
veins on domes  
of the Horne  
settlement  
anticline. "A dome with all the characteristics of a gold district was also located on the Horne settlement anticline, crossing the middle of Shubenacadie Grand Lake. The eastern end of the dome crosses the south-east shore of the lake half a mile north of the outlet, where a belt of auriferous veins has been prospected on the north dip. Further investigations should be made here, south of the old works and nearer the anticline. The west end of this dome skirts the north-west shore of the lake as far west as Rocky Brook, where auriferous drift is reported to have been found up the Rocky and King's Meadow brooks; thence it was traced along Sandy Lake and as far west as Joe. Shannaman's farm on the Beaver Bank road. No exposure was found at Indian Point on the Shubenacadie Grand Lake, but the centre of the dome certainly comes near this point, which should be a good field for prospecting. Another dome was located further west on this anticline, along the south shore of Pockwock Lake where quartz was observed at several places. The rocks are greatly altered here by the eastern end of the main granite area forming the backbone of the western part of the province, and only a few exposures of rock could be observed, not sufficient to make out the structure of the dome.
- Gold-districts  
surveyed. "Special detailed surveys were made, and plans partly completed, of the gold-districts of Waverley, Montague, Lawrencetown, Lake Catcha, Tangier and Cow Bay in the county of Halifax.
- Waverley  
gold-district. "*Waverley Gold District.*—Three weeks were spent surveying this interesting and important district and a plan on the scale of 250 feet to one inch was plotted in the field. The auriferous quartz veins, which have been worked from time to time since the first discovery of



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gold in 1861, are all interbedded between layers of 'whin' and slate on the crown of a huge anticlinal fold. The general course of the fold is N. 80° E. (*mag.*),\* and its axis pitches westward at an angle varying from 10° to 35° from the horizon, while one leg dips south, angle 25°, and the other north, angle 70°. Extensive denudation has worn away and truncated this enormous fold to a depth of over 12,000 feet, exposing a horizontal section of strata and intercalated auriferous veins which were formed 7000 feet below the base of the black slate group. The veins conforming with the strata, their outcrops have also a semi-elliptical shape, pointing westward and dipping north, west and south, like the saddle of the fold.

"The fault referred to above as following the Waverley chain of Faults. lakes, has greatly disturbed this anticlinal fold. The main dislocation runs up Lake William and Lake Thomas and passes immediately west of the short run uniting these two lakes. It causes a horizontal displacement of some 800 feet to the south on the east side of the fault. The west fault runs up by the railway station and through Muddy Pond, and has been ascertained by Mr. A. A. Hayward, in the underground developments of the Lake View Mine, to give a shove of 118 feet to the south on the east side, and to dip east at an angle of 40°. Another line of disturbance was also located by surface trenching on the same property at the south-west cove of Lake Thomas, but the displacement does not appear to be extensive.

"The high dip of the north side of the fold being more favourable to the formation of large and permanent auriferous veins than the low dip of the south side, all the most valuable veins are found on that side. As far as present operations indicate, the pay-zone attains its maximum development immediately north of the anticline on the West Waverley and Lake View properties, where it is over 600 feet wide, and has been worked for a length of 7000 feet. Several leads have been operated along this pay-zone, to depths varying between 200 and 350 feet, on the above properties, and most of them have given good returns to that depth, while a few, especially the most northerly, were found to decrease in size and value. A shaft sunk 628 feet on the dip of the Dominion lead, showed the vein to decrease from fifteen inches on the surface to a mere film of quartz with small lenticular pockets at the depth of 500 feet. A close study of the structure of the anticlinal fold shows that this diminution of the veins in size and value in depth is attained when the northern limit of the pay-zone is reached. In this district, the axis-plane of the fold forms the southern Pay-zone 600 feet wide.

Workable portions of veins limited to the pay-zone.

Axis-plane forms the southern limit of the pay-zone.

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\* The magnetic variation in this part of Nova Scotia is about 21° 30' E.

limit of the pay-zone and it dips south at an angle of  $69^\circ$  from the horizon, while the interbedded veins dip to the north at an angle averaging  $70^\circ$ , giving a diverging angle of  $41^\circ$  between the two planes; so that a cross-cut driven south from the bottom of the 628-foot shaft on the Dominion lead would reach the anticlinal axis at some 650 feet and should develop a large belt of veins in the auriferous zone, many of which do not crop at the surface. A cross-tunnel driven south from the 360-foot shaft on No. 6 lead, on the Lake View property, would likewise develop a belt of auriferous veins in the richest part of the pay-zone. On the West Waverley property, at the depth of 225 feet, a cross-tunnel was driven south 641 feet from the Brody lead to the anticline, cutting ten leads, two of which do not crop at the present surface.

Develop-  
ments.

"A considerable length of this auriferous-zone is still undeveloped, between the Lake View mine and the Laidlaw Hill property at the east end of the district, the disturbed condition of the strata having hindered, to some degree, any important operations.

Rich "Barrel-  
quartz" vein  
worked on  
anticlinal  
dome.

"A valuable and interesting 'barrel-quartz' vein, was worked extensively some years ago around the crown of the anticlinal dome on Laidlaw Hill. It was operated as deep as could possibly be expected from individual effort and gave very good returns. A company has lately consolidated these small properties, has driven a tunnel 670 feet long from the level of Lake Charles, cutting the barrel-quartz vein at the apex of the saddle, along which levels have been driven around the dome, 434 feet on its north dip and 238 feet on its south dip. The present developments prove the auriferous value of the vein to that level and for some distance lower, and show that the pay-zone at the extreme east end of the district is confined to the arch-core of the fold, upon which other auriferous veins certainly occur to much greater depth.

Arch-core of  
fold should be  
developed.

Yield.

"The total yield of the Waverley gold-district, taken from Dr. Gilpin's report on the 'Ores of Nova Scotia' published this year by the Department of Mines of the province, is, up to date, 61,308 ounces, from 122,346 tons of quartz, valued at \$1,200,000, or an average of \$9.81 per ton.

Montague  
gold-district.

"*Montague Gold District.*—Two weeks were spent in a survey of this important district, and a plan on the scale of 250 feet to an inch was partly completed in the field. All the veins operated in the district follow the stratification in the same manner as at Waverley, and are situated along an anticlinal fold that runs N.  $78^\circ$  E., and pitches east at an angle of  $8^\circ$ , on area 781 of the original block, and to the west at a very low angle, at the north end of area 951 in the same block.

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forming a long and narrow elliptical dome. The strata lie at a low angle for some distance on both sides of the saddle, the dip increasing gradually till it meets the perpendicular 1000 feet south of the axis, and reaches  $70^\circ$  at a distance of 1250 feet to the north of it, the axis-plane of the fold dipping north at an angle of about  $80^\circ$ .

“As far as present developments indicate, all the more important veins are found on the south dip, where they form, at the middle of the district, a pay-zone about 600 feet wide, the northern limit of which is about 500 feet south of the axis. The plan of the district is not sufficiently completed yet to report conclusively on it. A few words, however, may be said of the important pay-streaks which have been worked so extensively on the Lawson lead to a depth of 313 feet, on the Annand lead 250 feet with a trial shaft 400 feet deep, on the Twin lead 150 feet, and on the Rose lead to a depth of 270 feet with a shaft 388 feet deep. These rich pay-streaks are situated along an imaginary line running almost parallel with the anticlinal axis and they are characterized by enlargements and enrichments of the veins dipping to the west at low angles. Although there is reason to believe that the limit of the pay-zone has not been reached on the above mentioned leads, at the depths to which they have been worked, it is probable that in some of them the limit of the high-grade ore is near at hand. For the zone of rich streaks appears to be narrow, and as it is parallel with the axis-plane, it dips to the north at an angle of  $80^\circ$ , whereas the dip of the veins is to the south, angle about  $80^\circ$ , so that the two planes would give a diverging angle of  $20^\circ$ , and so limiting the length of the pay-streaks on individual veins. Thus, to keep in the pay-zone it becomes necessary to cross-cut north when the limit of the pay-streaks has been reached, and new veins will in this way be developed which might be barren or wanting on the surface.

Pay-zone 500 feet south of axis.

Richest pay-streaks limited within a narrow zone.

“The Golden Group Company, has lately acquired the Lawson, DeWolf and Rose properties; the plant and mill have been remodelled to handle with economy large quantities of ore; and, if the developments are carried on in the direction outlined above and the auriferous zone is systematically blocked out, there is every reason to believe that the large returns obtained in former years will again be realized, and a new system will be inaugurated which may do much to solve the problem of deep and permanent gold mining in Nova Scotia.

Developments on the Golden Group and Symonds-Kaye properties.

“Important leads are also being operated on the old Symonds-Kaye property at the south-west end of the district, which is characterized by angular veins intersecting the interstratified veins and giving rise to rich pay-chutes at their junctions. The undeveloped ground on the

northern part of this property and immediately west of the Lawson, is certainly promising and should be prospected.

“A few veins have been opened on the north side of the anticline, but developments have not yet been sufficient to locate the pay-zone; the field is, however, promising.

Faults.

“No fault of any importance has disturbed the structure of the fold. One cutting the strata at right angle on the south dip, opposite the middle of the dome, gives a maximum displacement of forty feet, measured horizontally at the Lawson lead, and a few parallel slide-faults have been met with in the workings of the Skerry, Rose and other leads. Their outcrops almost coincide with that of the strata and they dip south at low angles, the top part having moved upward and northward.

Yield.

“The total yield of the district to date is 39,071 ounces, valued at \$742,349, from 22,652 tons of quartz, or an average of \$32.77 per ton, the highest average of any district in the province.

Lawrence-  
town gold-  
district.

“*Lawrencetown Gold District.*—Two weeks were employed surveying this district and a plan on the scale of 500 feet to one inch was partly completed in the field. All the auriferous quartz veins developed some years ago but not worked lately, belong, as in the above two districts, to the interbedded class and are included in an area nearly half a mile wide and over one mile long. The remarkable width of auriferous ground, is due to the presence of two anticlinal folds, converging as they approach this district from the east. The immense strain and pressure accompanying the meeting of these two folds have developed, as at the Moose River district, fissures along the bedding planes which have eventually been filled by segregation, producing the auriferous veins which have been brought to view afterwards by extensive denudation and are now being worked.

Auriferous  
ground of  
remarkable  
width.

Two anti-  
clinal folds.

“The anticlinal folds have a general east-and-west course and are 1800 feet apart at the foot of Echo Lake. The most northerly crosses the lake 1600 feet north of the Mill stream outlet and the other crosses that stream 200 feet below the outlet. The syncline between these two anticlines runs down Echo River to the dam, coalescing towards the west with the southern anticline and terminating on the Shanghai property. All the openings on the east bank of Partridge River are situated on the opposite sides of this syncline, while on the Shanghai property they are on the north limb of the syncline, with the exception of those at the western end of the Bennett lead, which are on the south dip of the southern anticline. The operations along this double fold have established the presence of

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a rich pay-zone, which will certainly prove valuable when systematically developed with a proper knowledge of the structure of the strata. As depth is attained on the Wadlow belt, cross-cutting north will have to be done, to keep to the north of the synclinal trough and new veins will then be developed in a promising part of the pay-zone.

Developments of rich narrow pay-zone on Shanghai property.

“Several veins have also been worked for a distance of 2000 feet to the south of the double fold, some of which have given streaks of very high-grade ore; but none of them have been worked to any depth.

“A few small veins have also been tested on the north side of the north anticline, but heavy drift has prevented prospecting along this promising axis.

“One main fault has been located running down Partridge River in a south-east direction to the Lawrencetown Lake, with a horizontal shove to the south of some 200 feet, on the east side of the line; and two other right-hand faults were established to the west, parallel with it, with displacements of about 90 and 17 feet respectively.

Faults.

“*Lake Catcha Gold District.*—Two weeks were devoted to a detailed survey of this district, discovered some twenty years ago, and a plan on the scale of 250 feet to an inch is in progress. All the more important veins operated belong to the interbedded class of fissure-veins and are situated on the north side of a broad anticlinal fold. The general course of the fold is N. 74° E. (*mag.*) It pitches to the east at an angle of 25° and to the west at a low angle, forming a long elliptical dome. The strata on the south side of the axis dip south at a low angle, increasing gradually to 45° at a distance of 500 feet to the south of it. The structure on the south dip does not appear to be favourable for the development of quartz veins. On the north side the dip increases more rapidly and reaches 80° at a distance of 500 feet. In the folding, the strata have been subjected to greater pressure on the north dip, producing fault-fissures along the bedding planes into which important auriferous veins have been segregated. Some of these veins, like the Coleman, Mill and Iron leads, have been traced for a length of over one mile. The greatest depth yet attained in the workings is 225 feet on the Mill lead at the Oxford mine. Rich streaks have, however, been worked on several veins along their outcrops, notably on the Coleman, Mill and Battery leads on the Oxford property, and on the Lake and Sheba leads on the John H. Anderson property. The late J. M. Reid, while in charge of the Oxford mine, kept many records and plans of the underground workings which should prove very valuable in directing further developments. He established three well defined rolls or pay-streaks in the works of the Coleman lead, lying under one another in undulations dipping at

Lake Catcha gold-district.

Extent of veins.

Pay-streaks.

low angles in the plane of the vein. Some of these have not yet been worked out and it would be desirable to sink deeper to find out if other rolls exist beneath.

Zone of pay-ground.

“In looking over the plan of the district, we find that most of the best streaks on the Coleman, Mill, Battery, Lake and Sheba leads are situated along a well-defined zone. This zone leaves the anticlinal axis at the west end of the district, where rich drift has been discovered north-west of the Petite Mare bridge, on the Cogswell areas, and from there it runs N. 60° E. It therefore intersects the veins at an angle of 14°, until at the east end of the district it is found 1400 feet to the north of the axis. Much good ground is still undeveloped on the surface along this zone, on the Oxford, Anderson and Cogswell properties. In pushing the development work to greater depth, the dip of the pay-zone must be taken into consideration. The axis-plane of the fold dips to the south at an angle of 75°, and it is most probable that the pay-zone has the same dip to the south, so that cross-cutting south has to be done in this district, as depth is attained.

Direction of developments.

Auriferous fissure-veins.

“Two interesting auriferous fissure-veins are being developed in the district; one, the Cooper vein, occurs 3000 feet north of the anticline at the north-west end of the district and cuts the stratification in a north-east direction in the manner of an ‘angular,’ following a layer of slate for a short distance eastward, then cuts across a certain thickness of strata to another layer of slate which it follows to leave it again, and so on. It varies much in size, reaching four feet in places, and appears to show gold and sulphides more freely along certain belts of slate. The other fissure-vein, the Cogswell ‘angular,’ also cuts the stratification in a north-east direction, at the east end of the pay-zone, and it is more auriferous at its intersections with interbedded veins.

Faults.

“Several faults cut across the stratification and produce important displacements of the veins, often interfering with the progress of operations, but most of them have been accurately established by skilful developments. The most important is a right-hand fault on the Anderson property, running north-west and dipping south-west at an angle of 20°. The others are all high-angle breaks under forty feet, the eastern ones being left-hand breaks and the western ones right-hand breaks. However, there appears to be another prominent right-hand fault at the west end of the district, following La Petite Mare brook, the course of which is about N. 25° E., not yet exactly established, but important on account of the rich drift found on the undeveloped areas lying to the west of it. Total yield to October 1898 is 23,153 oz. of gold from 21,140 tons of quartz.

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" *Tangier Gold District.*—Eighteen days were devoted to a survey of this district, one of the first discovered and most important in the province, and a plan on the scale of 200 feet to an inch is in course of preparation. All the veins operated belong to the interbedded class of fissure veins, and occur along the axis of the anticlinal fold furthest south on the Atlantic coast. This fold is the western prolongation of that passing through the gold districts of Harrigan Cove, Moosehead and Ecum Secum; it has a general east-and-west (*mag.*) course, forms a long narrow elliptical dome and pitches to the east and west at angles under 15°. It dips to the north and south at angles reaching 70° on both sides, giving a perpendicular dip to the axis-plane. Tangier gold-district.

" Auriferous veins have been developed extensively for a length of over two miles along this fold, the most important operations being confined to the veins on the south dip, along a narrow and well-defined pay-zone. This pay-zone touches the anticlinal axis at the centre of the dome, a couple of areas east of the original Free-claim area, where it has a width of some 200 feet, comprising the rich pay-streaks worked on the Big-south, Little-south, and Nugget leads to depths of 100 to 150 feet. From the centre of the dome the pay-zone runs east and west, keeping a few degrees to the south of the course of the anticlinal axis, and intersects the various leads at a slight angle, creating enlargements and enrichments on the veins which have successively been worked towards the west on the Nigger, Butler, Blue, Leary, Lake, Tennant, Field and Bingay leads, and towards the east on the Little-south, Nugget or Kent, Twin or Dunbrack, Forrest and Wallace leads. Pay-zone well defined, but narrow.

" A few of these leads have been worked along their outcrops for nearly half a mile, but the greatest depths attained so far, are, only 240 feet on the Forrest, 160 feet on the Nugget and Leary, 140 feet on the Big-south, and 130 feet on the Little-south and Field leads. Most of these veins can certainly be successfully worked to greater depths. Still the pay-zone does not appear to have a great width, being only 200 feet wide at the centre and not much wider to the east and west, and, as its dip is about vertical and the veins dip between 55° and 65° to the south, the southern limit of the pay-ground will be reached at no great depth, especially on the southerly veins. Cross-cutting north will then have to be done to keep in the pay-zone, and new veins will thus be developed at their richest parts to great depths. Developments should follow the pay-zone.

" Most of the district was formerly held in small areas and operated by private individuals with limited means, but it has recently been consolidated under the management of one company, and we may look Cross-cutting to the north.

Vertical shaft on Free-claim area. now for larger and more permanent operations. The attention of this company might be directed to the desirability of making developments by cross-cutting north from the deeper shafts on the Big-south, Little-south and Nugget leads in the vicinity of the Free-claim area. Likewise, cross-cutting north should be done from the deeper shafts on the Forrest lead on Strawberry Hill property. The Free-claim area may be mentioned as one of the most promising locations for a deep vertical shaft with a system of cross-cuts and levels, as it would develop veins which do not crop to the surface, in one of the richest part of the pay-zone.

“Very rich drift found south of the Essex mill has not yet been traced to its source. It should be looked for along the pay-zone to the north of the Dunbrack lead.

“Only a few veins have so far been opened on the north dip, and none to any extent, but those immediately north of the axis at the centre of the dome, near the Free-claim area, are certainly very promising.

Faults.

“The structure of the anticlinal fold of this district has been more disturbed than that of any other in the province, by two important series of small faults which have a general north-west and south-east direction, and all dip at high angles. The eastern dislocation occurs on Strawberry Hill and is composed of a series of right-hand faults with horizontal shoves ranging from 76 feet down to a few feet, giving a total displacement of some 280 feet. The extensive operations made on the Forrest lead, have determined exactly the horizontal thrusts of every one of these breaks; but many rich pay-chutes, dipping west at angles of about 45°, have been lost by these faults and might yet be recovered by determining the extent of the upthrows.

“The western dislocation is composed of a series of left-hand faults beginning at the Essex mill, with horizontal displacements along a north-west and south-east course varying from a few feet up to 150 feet, and giving a total displacement of 470 feet. All these faults have been exactly determined by the important surface developments made by John Murphy and the late A. M. Barton, in their endeavour to locate leads to the west of the Essex mill, the drift of which was found very rich along the main road. The block of strata comprised between these two main dislocations has been thrust to the north by lateral pressure and contains the above mentioned promising veins not yet developed, which should be looked for along the pay-zone passing north of the Dunbrack lead.

Diorite dyke.

“A dyke of diorite, 40 feet wide, the only one known in the gold districts of the province, cuts the strata and auriferous veins at right



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angles on Strawberry Hill and has been traced in a straight line for two miles to Grum Point on the sea-shore. The dyke does not affect the richness or size of the veins and does not appear to be auriferous. It has, however, altered the adjacent rock for a short distance on each side of it.

“The total returns of the district, including the Mooseland mines Yield. situated on the next anticline to the north, are, up to date 20,491 ounces, valued at \$721,183, from 43,092 tons of quartz.

“*Cow Bay Gold District.*—A hurried survey of this district has Cow Bay gold-district. been made, but the plan is not yet plotted.

“All the veins developed here are true fissure-veins running north- Fissure veins. and-south and cutting the stratification at right angles with a vertical dip. A great number of them have already been opened, for a width of nearly four miles across the point of land stretching between the Eastern Passage of Halifax Harbour and Cole Harbour, and a few have been traced for over one thousand feet along their course, but none have yet been worked to any extent. The present developments prove that all these fissure-veins are more auriferous along a certain part of their course, corresponding with the crossing of a highly mineralized belt of gray felspathic quartzite about 100 feet wide, situated at the con- Richness of veins affected by adjacent rocks. tact of the upper-slate group with the underlying whin group. Some layers are so heavily charged with specks of magnetic pyrites as to affect the needle of the compass. The strata of this mineralized belt dip to the south at an angle of 35° from the horizon, and the pay-chutes of the veins will necessarily dip to the south at the same low angle and ought to be developed on that incline to great depth. No doubt many of the failures met with in the present operations are due to the ignorance of this important fact.”

### CHEMISTRY AND MINERALOGY.

Reporting on the work done in these branches of the Survey's opera- Chemistry and mineralogy. tions, Dr. Hoffmann says:—“The work carried out in the chemical laboratory during the past year has been, as heretofore, almost exclusively confined to the examination and analysis of such minerals, ores, etc., as were deemed likely to prove of economic value and importance. It embraced:—

“1. Analyses of fuels—including lignite, lignitic coal, and coal.

“2. Analyses of natural waters—with the object of ascertaining their Analyses and assays. suitability for domestic or manufacturing purposes, or probable value as remedial agents—from various localities in the provinces of Quebec, Ontario and British Columbia, as also in the North-west Territory.

Analyses and  
assays.

" 3. Analyses of limestones and dolomites—in continuation of the series of analyses of such stones already carried out, in connection with an inquiry into their individual merits for structural purposes, for the manufacture of lime, or of hydraulic cement, or for metallurgical and other uses.

" 4. Analyses of iron ores, including magnetites and hæmatites, from certain localities in the provinces of Quebec and Nova Scotia.

" 5. Analyses, in regard to nickel content, of certain ores from the provinces of Quebec, Ontario and British Columbia.

" 6. Analyses of rocks from certain localities in the provinces of Quebec, Ontario and British Columbia.

" 7. Analyses of several highly interesting minerals, some of which were not previously known to occur in Canada—amongst them, pyrocrase, a hydrous niobate and titanate of yttrium, erbium, cerium, and uranium; and others which, from a commercial standpoint, are of economic importance, as for example—wolframite, a tungstate of iron and manganese, a mineral not hitherto met with, in situ, in Canada, which has been found distributed through a quartz vein in Inverness County, Nova Scotia; 'natural soda,' which has been met with in considerable abundance in certain small shallow lakes—the deposit in one of which is estimated to represent, at present, some twenty thousand tons, not very far north of Clinton, Lillooet district, British Columbia; and an earthy variety of magnesite, the sender of which stated that it had been represented to him as having been found in considerable quantity, forming two distinct deposits, about forty miles from Quesnel Forks, Cariboo district, British Columbia—an occurrence which would appear to the writer to need further confirmation.

" 8. Assays, for gold and silver, of ores from the provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia, as likewise from the North-west Territory.

" 9. Miscellaneous examinations, such as the examination, and, in many instances, partial analysis, of samples of bog manganese, iron ochre, iron sand, disseminated graphite, carbonaceous shale, marl, clay, and other material not included under the above headings.

Minerals  
examined.

"The number of mineral specimens received for examination amounted to eight hundred and sixty-one. Of these, very many were brought by visitors, who obtained the desired information in regard to them at the time of their visit, or failing that—owing to a more than mere cursory examination being necessary, or when a partial or even a complete analysis was considered desirable—it was subsequently conveyed to them by letter. The number of letters personally written.

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—chiefly of the nature of reports, and embodying the results of the examination, analysis or assay, as the case might be, of mineral specimens—amounted to two hundred and sixty-three; and of those received, to one hundred and twenty-three.

“Messrs. R. A. A. Johnston and F. G. Wait, assistants in the laboratory, have applied themselves with great assiduity to the work in hand, and as a result, accomplished a large amount of work, thereby rendering excellent service. The former has, apart from the carrying out of a large number of gold and silver assays, made many important mineral analyses, and likewise conducted a great variety of miscellaneous examinations; whilst the latter, in addition to numerous water-analyses, and others, of a more or less partial nature, of iron ores, manganese ores, and the like, has also conducted many miscellaneous examinations. Work of assistants.

“In the work connected with the mineralogical section of the museum I have been very ably assisted by Mr. R. L. Broadbent. He has, in addition to the general museum work—such as the labelling and cataloguing of all newly received specimens, and the maintenance of the collection generally in an orderly condition—also arranged and catalogued the collection of rocks, consisting of some seven thousand specimens, contained in the drawers under the table-cases, and placed away a further thousand specimens, for which no room could be found in the drawers, in the annex to the Survey. Museum work.

“The additions to this section of the museum—which now contains over seven thousand specimens on exhibition—during the past year, amounted to one hundred and ten. Of these the following were:— Contributions to museum.

(A.) *Collected by members of the staff, or others engaged in field-work in connection with the Survey:—*

Adams, Dr. F. D.:—

- a. Phlogopite, from the townships of Monmouth and Cardiff, Haliburton county, O.
- b. Corundum, from the township of Methuen, Peterborough county, O.
- c. Graphite, from the township of Monmouth, Haliburton county, O.
- d. Molybdenite, from the township of Harcourt, Haliburton county, O.

Ami, Dr. H. M.:—

- a. Limestone, from McLean's quarry, Lime Brook, Springville, Pictou county, N.S.
- b. Sand, from Britannia Bay, Ottawa River, Carleton county, O.
- c. Hematite, from Grand Pré, Kings county, N.S.

Contributions  
to museum—  
Cont.

Bailey, Professor L. W. :—

- a. Manganiferous siderite, from Peabody farm, 2 miles south of Woodstock, Carleton county, N.B.
- b. Chalcopyrite and pyrite, from Bull Creek, 3 miles below Woodstock, Carleton county, N.B.
- c. Pyrite, galena and chalcopyrite, from Woodstock, Carleton county, N.B.
- d. Coal, from Sandstone quarries, Clifton, Gloucester county, N.B.
- e. Quartz, from Greer Creek, west bank of the St. John River, nearly opposite the mouth of Eel River, St. John county, N.B.
- f. Briquettes of manganese, from Dawson Settlement, Albert county, N.B.
- g. Sandstone, from Rockport, Westmoreland county, N.B.
- h. Sand, from Lake Utopia, Charlotte county, N.B.
- i. Conglomerate, from Turtle Creek, Albert county, N.B.
- j. Bituminous shale, from Baltimore, Albert county, N.B.
- k. Ferruginous clay, from Hopewell Cape, Albert county, N.B.
- l. Silt, from Black's Harbour, St. George, Charlotte county, N.B.
- m. Pyrrhotite, from St. Stephen, Charlotte county, N.B.

Barlow, A. E. :—

- a. Quartz, orthoclase, and albite, from the township of Wicklow, Hastings county, O.
- b. Mica, from the township of Dungannon, Hastings county, O.
- c. Quartz crystals (red), from the township of Mayo, Hastings county, O.

Dawson, Dr. G. M. :—

- a. Sandstone (Laramie), from Edworthy's quarry, Bow River, about four miles above Calgary, district of Alberta, N.W.T.
- b. Magnetite, from the Pot-hook mine, near Sugar-loaf Hill, Yale district, B.C.

Ells, Dr. R. W. :—

- a. Pyrite, from the township of Lanark, Renfrew county, O.
- b. Phlogopite, from the township of Wright, Ottawa county, Q.

Faibault, E. R. :—

- a. Limestone, from Goat Lake, Chester, Lunenburg county, N.S.
- b. Limestone, from Indian Point, Lunenburg county, N.S.

McEvoy, J. :—

- a. Native sulphur, from three miles above Jasper Lake, district of Alberta, N.W.T.

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- b. Cyanite and beryl, from the mica mine seven miles south of Tête Jaune Cache, Fraser River, B.C. Contributions  
to museum—  
Cont.
- c. Cyanite, from mountain south of Camp River, Canoe River, B.C.

Willimott, C. W.—See beyond.

(B.) *Received as presentations* :—

Ade, Wm., Ottawa, O. :—

Dolomitic limestone, Ottawa.

Bostock, H., M.P., Monte Creek Ranch, Ducks, B.C. :—

- a. Chalcocite, bornite and native copper, from the Pot-hook claim,  $1\frac{1}{2}$  mile north-west of Sugar-loaf Hill, Kamloops, B.C.
- b. Concretionary limestone. from Wardner, Yale district, B.C.

Bousfield, Rev. Geo., Billings Bridge, O. :—

Bog iron ore, from the township of Marlborough, Carleton county, O.

Constantine, Inspector C., N.W.M.P. :—

- a. Gold nugget, from Eldorado Creek, Klondike River, Yukon district, N.W.T.
- b. Auriferous gravel, from Eldorado Creek, Klondike River, Yukon district, N.W.T.
- c. Fragment of mammoth-tooth with embedded gold nugget, from Eldorado Creek, Klondike River, Yukon district, N.W.T.

Donaldson, Morley, Canada Atlantic Ry., Ottawa, O. :—

- a. Sand, from head of Round Lake, 12 miles from Killaloe, Renfrew county, O.
- b. Sand, from foot of Round Lake.
- c. Sand, from the Ottawa River, about seven miles below Ottawa City.

Doucet, M. J., Grand Etang, N.S. :—

Chalcopyrite, from Cape Rouge, five miles north of Cheticamp, Inverness county, N.S.

Douglas, Captain Bloomfield, R.N.R. :—

Garnets in mica-schist from St. Paul Island, Gulf of St. Lawrence.

Ferrier, W. F., B. Ap. Sc., Rossland, B.C. :—

- a. Apophyllite, from the 600-foot level, LeRoi mine, Rossland, B.C.
- b. Pyrite in quartz, from the Sunset claim, near Nelson, West Kootenay district, B.C.

Contributions  
to museum—  
Cont.

- c. Quartz with tourmaline and pyroxene, from cutting on Slocan River Railway, between Slocan Crossing and Slocan Lake, West Kootenay district, B.C.
- d. Gahnite (zinc spinel) in corundum, from the township of Raglan, Renfrew county, O.
- Gibson, R. H., Manitowaning, O. :—  
Petroleum, from Manitoulin Island, Ont.
- Latimer, F. H., Vernon, B.C. :—  
Auriferous quartz, from the Falcon claim, near Vernon, B.C.
- Leonard, R. W., Ottawa, O. :—  
a. Disseminated graphite, from twelve miles west of Kazabazua, Ottawa county, Q.  
b. Calcite, apatite, mica and fluorite, from Cobden, Renfrew county, O.
- McCarty, P., Calgary, N.W.T. :—  
a. Chalcopyrite, from between the head-waters of Cascade and Johnson Creeks, district of Alberta, N.W.T.  
b. Galena, from Castle Mountain, near Eldon station, C. P. Ry., district of Alberta, N.W.T.  
c. Sphalerite with pyrite, in quartz, from Storm Mountain, Rocky Mountains, district of Alberta, N.W.T.
- McDougall & Secord, Messrs., Edmonton, N.W.T., per J. McEvoy, (Survey) :—  
Pyrite, from Buffalo River, Great Slave Lake, N.W.T.
- McGown Mining Company, Parry Sound, O., per Geo. Burn, Manager Bank of Ottawa :—  
Bornite, native gold, and galena, from the McGown Mining Co's. property, township of Foley, district of Parry Sound, O.
- McGregor, Robert, Calabogie, O. :—  
Sand, from Calabogie Lake, township of Bagot, Renfrew county, O.
- McKillip, A. T., per W. F. Ferrier, Rossland, B.C. :—  
Cerussite, from Whitewater, Kaslo-Slocan Ry., West Kootenay district, B.C.
- McLellan, Allan, Ottawa, O. :—  
Chalcopyrite, from the township of Mayo, Hastings county, O.
- Moxley, J. E., Ottawa, O. :—  
Clay concretions, from Priest Creek, township of Portland East, Ottawa county, Q.

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Contributions  
to museum—  
Cont.

- Nordenskjöld, Baron A. E., Sweden :—  
Fragment of core from boring.
- Rutledge, J., Ottawa, O. :—  
Three crystals of phlogopite from the township of Masham,  
Ottawa county, Q.
- Sorette, H., Bridgewater, N.S. :—  
Mica-diorite, from Welsford, Queens county, N.S.
- Stewart, J., Grande Prairie, B.C. :—  
Chalcopyrite, from the Key claim, Grande Prairie, Yale district,  
B.C.
- Summers, B., St. Thomas, O., per L. M. Lambe (Survey) :—  
Columnar limestone, from Springbank, St. Catharines, Lincoln  
county, O.
- Taschereau, Fortier, St. François, Beauce Co., Q. :—  
Grey granite, from St. François Nord-est, Beauce county, Q.
- Tisdale, Col., M.P., Simcoe, O. :—  
Auriferous quartz, from Michipicoten, district of Algoma, O.
- Tunstall, J. C., Vernon, B.C. :—  
Auriferous quartz, from the Cariboo mine, Camp McKinney,  
Osoyoos mining division, B.C.
- Walker, Major J., Calgary, N.W. T. :—  
a. Bornite, from deposit at head of Panther River, district of  
Alberta, N.W.T.  
b. Chalcocite, from Castle Mountain, near Eldon station, C.P.Ry.,  
district of Alberta, N.W.T.  
c. Chalcocite, from between head-water of Cascades and Johnson  
Creeks, district of Alberta, N.W.T.  
d. Chalcocite and galena, in quartz, from Ice River, about three  
miles from the head, S. W. side of valley, Rocky Mountains, B.C.  
e. Muscovite, from about three miles up Ice River, Rocky Moun-  
tains, B.C.
- Whyte, Wm., General Supt., Western div., C.P.R., Winnipeg :—  
Sandstone, from C.P.R. quarry, about three miles west of Calgary,  
district of Alberta, N.W.T.
- Winning, B., per Wm. McInnes (Survey) :—  
Auriferous quartz, from Bad Vermilion Lake, Seine River, dis-  
trict of Rainy River, O.
- Willimott, C. W., Ottawa, O. :—  
Six twin crystals of sphene from the township of Litchfield, Pon-  
tiac county, Q.

Contributions  
to museum—  
Cont.

Willimott, R. R., Fort Steele, B.C. :—

Cerussite, from the North Star mine, Mark Creek, East Kootenay district, B.C.

Winter, S. & Co., Moncton, N.B. :—

Muscovite, from seven miles south of Tête Jaune Cache, Yale district, B.C.

Wood, Wentworth F., Kamloops, B.C. :—

a. Native copper, from the Pot-hook claim, one mile and a quarter north-west of Sugar-loaf Hill, B.C.

b. Chalcocite, from the Grey Eagle claim, two miles and a quarter west of Nesbitt on Meadow Creek, S.W. of Kamloops, B.C.

c. Chalcopyrite, from the Key claim, Grande Prairie, Yale district, B.C.

Educational  
collections  
supplied.

Mr. C. W. Willimott has, for the most part been engaged in making up collections of minerals and rocks for various educational institutions. The following is a list of those to which such collections have been sent :—

1. Public School, Milton, Queens Co., N.S.....	75 Sps.
2. Toronto Church School, Toronto, Ont.....	75 "
3. High School, Brampton, Ont.....	100 "
4. " " Regina.....	100 "
5. St. Patrick's School, W. end, St. John, N.B. ....	75 "
6. Waterloo Academy, Waterloo, Que.....	75 "
7. Brantford Young Ladies College, Brantford, Ont.....	75 "
8. Free Library, Brantford, Ont.....	100 "
9. Ecole St. Joseph, Montreal, Que.....	75 "
10. Public School, Souris, Man.....	75 "
11. Sussex School, Sussex, N.B. ....	75 "
12. St. Patrick's Convent, Halifax, N.S.....	75 "
13. Public Library, Tweed, Ont.....	75 "
14. College St. Joseph, St. Ephrem d'Upton, Que.....	75 "
15. McAdam Superior School, McAdam Junction, N.B.....	75 "
16. High School, Watford, Ont.....	100 "
17. Public School, Milford, Hants Co., N.S.....	75 "
18. Department of Education, Toronto.....	100 "
19. University of Manitoba, Winnipeg, Man.....	100 "
20. High Commissioner's Office, London, Eng.....	19 "
21. Laval Business College, St. Vincent de Paul, Que.....	4 "
22. High Commissioner's Office, London, Eng.....	14 "
23. Imperial Institute, London, Eng.....	5 "
24. High School, Leamington, Ont.....	100 "
25. Central School, Hamilton, Ont.....	100 "
26. Collegiate Institute, Stratford, Ont.....	100 "
27. Public School, Penobsquis, N.B.....	75 "
28. St. Anthony's Academy, Montreal.....	75 "
	2,067 "



## Geological Survey Department.

“He also made up a collection of the more important Canadian economic minerals, including building stones and marbles, for the Omaha Exhibition, and also other smaller collections of miscellaneous minerals for various foreign institutions.

“Apart from this, he visited in the course of the summer—for the purpose of procuring further material for the making up of collections of the nature above referred to—the townships of Hull, Calumet, Litchfield, Maniwaki, Kensington and Egan, in the province of Quebec; and of Hawkesbury, Pakenham, Fitzroy, Renfrew, Hagarty and Calvin, in the province of Ontario.

Collections  
made by Mr.  
Willimott.

“Whilst so engaged, he collected a large and varied assortment of minerals, comprising among others:—

	Specimens.	Weight.
Allanite.....	9	
Beryl, in the matrix.....	21	
Iron- and copper-pyrites. . . .	5	
Mica, crystals.....	5	
Molybdenite, in the matrix . .		800 pounds.
"    free from gangue		37   "
Pyrrhotite.....		50   "
Scapolite, crystals.....	30	
Sphene, crystals.....	10	

“In addition to these he collected twenty or more mineral specimens from a coarse granite vein in the township of Calvin, among which were specimens of the xenotime—referred to in my last report, and an associated mineral which has been examined by Mr. R. A. Johnston and shown to be polycrase. He likewise collected some thirty specimens representing what may be referred to as the niccolite locality on Calumet Island. These include some fine specimens of niccolite (nickel arsenide), and representative specimens of the nickeliferous pyrrhotite there met with.

“The foregoing included some good cabinet specimens. These have been placed in the museum.

“Mr. Willimott subsequently visited numerous localities in the Western Peninsula of Ontario for the purpose of collecting specimens of building stone, limestones employed for burning, and samples of the lime prepared from the latter; also of cements. He obtained:—

Quarries  
visited in  
Western  
Ontario.

“In duplicate, fragments suitable for dressing into six inch cubes, of material employed for building purposes—of limestone from St. Marys; of dolomite from Beamsville, Thorold, Niagara, Galt, Guelph, Puslinch and Owen Sound; and sandstone from Caledon and Mono.

Samples of limestone employed for burning, and of the limes prepared from the same, from Ballantyne kilns, Galt; Kennedy's kilns and Toronto Lime Co's. kilns, Guelph; Slater's kilns, St. Marys; and Toronto Lime Co's. kilns at Limehouse and Nassagaweya. Specimens of raw cement stone, and cement prepared from the same, from Battle's works, Thorold; Usher's works, Niagara; and Toronto Lime Co's. works, Limehouse. Samples of clay, marl, and cement prepared from the same, from the Owen Sound Cement works, Shallow Lake; and of marl from Caledon; and of clay from Garafraxa.

"Whilst engaged in this last mentioned work he collected much useful information in regard to the quarries, etc. This he has embodied in the following notes:—

Notes made  
on quarries.

"On the 17th of October I started for Western Ontario to visit a number of quarries, lime kilns and cement works. Valuable information was in the first place obtained from contractors, stone masons and engineers in the cities of Toronto, Hamilton and St. Catharines, regarding their estimation of the more important building stones, limes and cements, the preponderance of stone used in each city and the sources from which the several materials come.

Beamsville  
quarries.

"The Beamsville quarries in Clinton may be considered one of the principal sources from which nearly all the stone for bridge work on the Grand Trunk Railway is obtained. At the time of my visit a large number of car-loads of dimension stone were awaiting shipment to the Victoria Bridge, Montreal. It is anticipated that 6000 yards of stone will be shipped from these quarries this year.

Queenstown.

"Queenston Quarries.—These quarries are situated on the Heights in the township of Niagara, and show a quarry face of about twenty-six feet, consisting of twelve feet of grayish dolomite underlaid by fourteen feet of bluish dolomite in beds of six inches to six feet. This stone has been used in the power house, Niagara Falls, several bridges and the Brock monument, and is shipped to Buffalo, London, Hamilton, St. Thomas, etc. The upper beds are of a warm gray colour and very fine-grained, they take a high polish, and are largely used for monumental purposes.

Cement  
works.

"Adjoining these quarries are the Queenston Cement Works—employing about thirty men. The cement-stone used lies immediately below the twenty-six feet of dolomite mentioned above, and has an average thickness of six feet, which has been excavated over an area of six acres. This stone is burned in four draw-kilns, each having a capacity of 350 barrels a day. The burnt stone is then carried by shoots to the crushers, then through chilled iron plates and buhr stones, and finally

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bolted. At the time of my visit, about 6000 barrels of cement were in the storehouse. This company expect the output this year to be between 40,000 and 50,000 barrels. This cement has been used in Sault Ste. Marie and St. Lawrence canals, Grand Trunk and Michigan Central railways, and also to a considerable extent for local purposes.

“The Battle Cement Works at Thorold are working on a nine-foot bed of cement-stone overlain by fourteen feet of dolomite. This stone is burned at the quarry in draw-kilns, then carted in wagons to their mill in the village, about one mile. This cement is employed apparently for local uses such as the construction of silos, floorings and plastering the walls of houses. About 4000 barrels will be the output this year—240 pounds net to the barrel.

Battle Cement works.  
Thorold.

“At the Melrose Quarry, Galt, a small quantity of dimension stone is being extracted. The Ballantyne Lime Works, in the same township, have in operation four draw-kilns, each having a capacity of 300 bushels. The lime, which is very white, is largely in demand in Toronto, Kingston and Galt, the output from the works depending upon requirements.

Melrose quarry.  
Galt.

“The Priest's, and J. Kennedy's quarries are both in operation, the former belonging to the Toronto Lime Co. These stones belong to the Guelph formation and vary in texture and colour, according to the depth from which they are taken. In the Kennedy quarry, they are working on lower beds than in the Priest's quarry, that appear to be much tougher and coarser grained. These stones are used extensively in Guelph and the western cities, London, Goderich, etc. A large Catholic church in Guelph was built with stone from the Priest's quarry. The stone is largely used also for burning and four draw-kilns are in operation, each with capacity of 340 bushels. This lime is used in all towns and cities in the north and east, as well as in Toronto. The output is about 40,000 bushels a year.

Quarries at Guelph.

“The Kennedy Lime Works in connection with their quarry have three draw-kilns in operation, each having a capacity of 300 bushels. The principal markets for this lime are Toronto, London, Goderich and Sarnia. The output this year will be about 40,000 bushels.

Kennedy lime works.

At the Elliott quarry at St. Marys, about twenty-five feet of beds have been cut, the beds varying from two inches to one foot. A large number of beds suitable for flagging might be obtained from this quarry. This stone has been used in buildings in London and Stratford as well as locally.

St. Marys.

“The Slater Lime Kilns, in the same town, have two draw-kilns in operation and ship largely to the western and northern markets. Their output this year will be about 60,000 bushels at 16 cents a bushel.

Slater kilns.

Cement  
works at  
Shallow Lake.

“The Owen Sound Portland Cement Works, at Shallow Lake in the township of Keppel—are situated in close proximity to an extensive marl swamp, which being underlaid by a blue clay, affords an admirable material for the compounding of their cement.

“This marl extends over 500 acres, and is underlain by five feet of blue clay. These two ingredients are mixed in certain proportions, then burned to a clinker, after which it is ground to an impalpable powder.

“These works which employ 150 men, have nine bottle-kilns in operation, each having a capacity of 300 bushels, consuming seven car-loads of coke and three car-loads of coal a week. At the time of my visit extensive operations were in progress in enlarging these works. This cement, known as the Samson brand, is used throughout Western Ontario and Manitoba and has been employed in the Trent Valley Canal, Sault Ste. Marie Canal, Departmental Buildings, Ottawa, etc. About 70,000 barrels will be the output this year, price \$2.30 a barrel. A large number of testimonials are furnished by the company, from engineers and others all over Canada, many of whom claim that this cement is equal if not superior to any other.

Owen Sound  
quarry.

“The Owen Sound quarry, owned by D. Chalmers, is being worked by a small force of men, on an average four-foot bed of dolomite, which is largely used for bridge work; the Sault Ste. Marie bridge being built of this stone, as well as many others on the Canadian Pacific Railway. The underlying beds, which are very shaly, are considered only fit for burning.

Marl deposit.

“In the township of Caledon, between the third and fifth concessions, near the town-line of Garafraxa, it is claimed that a deposit of shell marl extends over 350 acres, to the depth of thirteen feet, overlain by 5 feet of peat. Adjoining this deposit in the township of Garafraxa is a bed of clay that has been tested to the depth of sixteen feet over an area of 20 acres. This property is owned by the Orangeville Cement Company, Orangeville.

Quarry at  
Orangeville.

“The Owen Sound Stone Company’s quarry at Orangeville, in the township of Mono, is in operation with about twenty men employed. This stone is a grayish, fine-grained sandstone, occurring in beds from four to seven feet thick, overlain by four feet of limestone and fifteen feet of alluvial soil. Dimension stone seven by seven feet, and any length can be obtained. The output this year (1898), it is stated, will be about 20,000 cubic feet. This stone is sold in Toronto, Windsor, Chatham and London. It has been used in the construction of the new City Hall, Toronto; also the Episcopal church at Listowel and

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the Methodist church at Arthur, Ont. Mr. Isaac Nicholson who owns the property adjoining the above-described quarry, also takes out a small quantity of stone annually, for local use.

"The Limehouse Cement and Lime Works owned by the Toronto Lime Co., have three draw-kilns and eight set kilns in operation.

"The cement-stone has an average thickness of seven feet, overlain by twenty-five feet of dolomite, both varieties of stone being burned at the quarry, producing cement and lime used in Toronto and Western, Ontario.

"In the township of Esquesing sandstone is quarried by Mr. Bate, Townships of Esquesing and Nassagaweya. and in Nassagaweya, by Mr. McGibbon. This latter quarry was hurriedly visited. In it, beds from three to thirty inches and having a depth of about twelve feet, are worked. This stone is principally suitable for sills and flagging. Some beds are spotted with iron oxide.

"A lime-kiln belonging to the Toronto Lime Co. is also in operation Lime-kiln. in Nassagaweya. One of the two draw-kilns was at work at the time of my visit. The beds at this quarry average about four feet in thickness, having a total thickness of about fifty feet, but they are apparently very much shattered by high explosives. The product is largely used in the crushed state in making paving in Toronto. The lime made from this stone is very strong, of a grey colour, and is used in Toronto, Peterborough, London, St. Thomas, etc. The output this year will be about 60,000 bushels, priced at 10c. a bushel at kiln.

"In the township of Caledon, lot 1, concession 2, is a quarry Caledon. known as Smeaton's quarry. The upper bed or brown-stone, (sandstone) is three feet six inches in thickness. Underlying this are two beds of gray stone, (sandstone) two feet six inches and one foot respectively. These stones are largely use for curbing and sills and have been extensively used in Toronto, Berlin, London, St. Thomas, Windsor, etc. The Parliament Buildings, New City Hall and Forester's Temple in Toronto, utilized quantities of this stone.

"The quarries and lime-kilns mentioned above comprise the more important workings on the line of travel actually followed, but much information has also been secured bearing upon adjoining quarries and workings which were not actually visited. Statistical details respecting these were also obtained, and notes on other works of the same kind, all of which have been handed over to the Section of Mineral Statistics and Mines.

## SECTION OF MINERAL STATISTICS AND MINES.

Mr. E. D. Ingall, the officer in charge of the section, reports as follows :—

Mineral  
statistics.

“ There is nothing new to report in regard to the work of the section, which was carried on along similar lines to those followed in former years. The preliminary Summary Statement of the Mineral Production of Canada for 1897, was completed by the 23rd of February of the current year, and issued shortly afterwards. The work of preparation of the detailed report on the Statistics and Technology of the Mining Industry for 1897 was proceeded with, and that report is now going through press.

“ Besides the above matters, the time of the staff has been occupied by such general work as that of the preparation of memoranda, giving information to inquirers on a great variety of subjects regarding technical matters, relating to the economic minerals of the country. The routine work was prosecuted as far as time and means at command permitted, and some progress was made in the effort to obtain and keep posted to date our records regarding the mineral deposits, borings and mining developments, and to keep the same filed away systematically for reference. The necessity for the keeping of such records is evident, but it involves continuous work and with the limited means at command, the end desired can be only partially attained. Apart from the time occupied in the general supervision of the work, and in connection with the preparation of the annual report, my own efforts were, during several months, directed towards the completion of the report on the iron deposits of the Kingston and Pembroke Railway district. This was brought almost to completion and will be finished as soon as the work of putting the annual report through the press is done with.

“ Owing to the pressure of office work, no time was available for the prosecution of any field-work.

“ We are indebted to Mr. J. D. Fraser, Ferrona Iron Works, for a valuable series of analyses of Nova Scotia iron ores published in the last report.

“ Mr. A. A. Cole, senior assistant on the staff left, in January, and the vacancy thus caused was filled by Mr. Theo. Denis, in April. To these gentlemen and to Mr. J. McLeish are due thanks for their able assistance.

# Geological Survey Department

## PALÆONTOLOGY AND ZOOLOGY.

Mr. Whiteaves submits the following summary of the palæontological and zoological work during the year 1898.

“The MS. of the fifth and concluding part of the first volume of *Contributions to Canadian Palæontology*, which was commenced in 1897, was completed in June, 1898, and the part itself has since been published and distributed. It consists of 76 pages large octavo of letterpress, illustrated by three full page plates and five woodcuts. The letterpress is made up of two papers, with general title-page, letter of transmittal and index. The first of these papers is entitled ‘On some additional or imperfectly understood fossils from the Hamilton formation of Ontario, with a revised list of the species therefrom,’ and the second (which is an appendix to the whole volume), a ‘Revision of the nomenclature of some of the species described or enumerated in previous parts of this volume, and additional notes on others, necessitated by the progress of palæontological research.’ The preparation of these papers has led to a considerable correspondence with local collectors and with specialists in the United States and Great Britain. It has also instigated the presentation of several rare fossils to the museum. The specimens from Thedford and Bartlett’s Mills lent by the U. S. National Museum, and referred to in the Summary Report of last year, have been returned, and the nomenclature of the species has been revised.

“The MS. of the fourth part of the first volume of ‘Mesozoic Fossils’ has been written, but needs a final revision before it will be ready for publication, and the drawings for its illustration have yet to be made. The part is intended to consist of an illustrated monograph on the (animal) fossils of the coal-bearing rocks of the Cretaceous system in the Queen Charlotte Islands (B.C.), based largely upon collections made by Dr. C. F. Newcombe in 1895 and 1897, but comprising also additional notes on the species collected by Mr. James Richardson in 1872 and by Dr. G. M. Dawson in 1878, with a revision of the nomenclature of this local fauna up to date.

“By permission of the Director, a paper entitled ‘On some fossil Cephalopoda in the museum of the Geological Survey of Canada, with descriptions of eight species that appear to be new,’ has been prepared and published in the *Ottawa Naturalist* for September, 1898. It is intended to republish this paper, with illustrations, in one of the Survey publications.

“The somewhat extensive collection of fossils from the Cambro-Silurian, Silurian, Devonian, Cretaceous and Laramie rocks of Manitoba Collections examined.

and the North-west Territories, belonging to the Provincial Museum at Winnipeg, which was sent to the writer last autumn for examination and identification, was named as far as practicable, during the summer, and returned. A few fossils also, have been named for Mr. F. W. Wilkins, of Norwood, Ontario.

“A preliminary study has been made of the fossils collected by Mr. J. B. Tyrrell from the Cambro-Silurian, Silurian and Devonian rocks of northern Manitoba, in 1897, and by Mr. J. McEvoy from the Devonian, Carboniferous and Laramie rocks of the Rocky Mountains in 1898.

Collections loaned.

“A few types of critical species of Canadian fossils have been lent at various times to the Professor C. D. Walcott, Director of the U. S. Geological Survey, who has been engaged on a revision of the Cambrian Lingulidæ; to Prof. A. Hyatt, of Boston, Mass., who has long made a specialty of fossil Cephalopoda; and to Miss Donald, of Carlisle, England, who is making a study of the genus *Murchisonia* and its allies.

Zoology.

“The additions to the zoological collections in the museum during the past year have been fairly numerous. Among them are a number of skins of small mammals, a few bird-skins and a set of the eggs of Townsend's solitaire, collected by Mr. Spreadborough in the Rocky Mountains last summer; a head of the 'wood buffalo' from the District of Athabasca; a black variety of the red squirrel from New Brunswick; an albino or nearly albino scaup duck from Manitoba; and a set of the eggs of the rock ptarmigan from the summit of the Chilcat Pass. A large series of recent Chitonidæ that had been lent to Professor Pilsbry during the preparation of his monograph of that family in the fourteenth and fifteenth volumes of his continuation of Tryon's Manual of Conchology, has been labelled in accordance with the nomenclature in those volumes, and returned. All the Belas in the museum of the Survey, from the Atlantic and Pacific coasts of Canada, have been lent to Prof. A. E. Verrill, of Yale University, for study and comparison.

Official duties.

“The duties of Acting Director have been performed for about seven weeks, during the Director's absence in British Columbia and Nova Scotia.

Work by Dr. H. M. Ami.

“Dr. H. M. Ami spent some time last January in instituting comparisons between the fossils described from the Devonian and Carboniferous of other parts of the world and those assigned to the same periods in Nova Scotia. Advantage was also taken of the visit of Dr. David White, of the U. S. Geological Survey, to obtain his opinion on



## Geological Survey Department.

the large collections of fossil plants made by Dr. Ami in Colchester, Pictou and Kings counties in the province. His observations on these collections have materially assisted in ascertaining more nearly than before the precise equivalency of the horizons represented in comparison with those recognized in the United States. At a later date, while on leave of absence in consequence of ill-health, Dr. Ami visited, in company with Dr. White, portions of the Pennsylvania Coal Field, where he found the character and succession of the beds to resemble closely that met with at corresponding horizons in Nova Scotia. The Pocono formation, in particular, recognized as the lowest subdivision of the Carboniferous in Pennsylvania, containing a flora closely resembling that of the Riversdale series in Nova Scotia. The information gained at this time was of material assistance in connection with the work noted on a later page.

Nova Scotia  
and Pennsylv-  
ania  
Carboniferous  
compared.

“ Collections of fossils from the following localities received during the past year were also examined by Dr. Ami, and preliminary lists of the species made, as far as practicable, for future use and reference.

“ From the North Slope, Springhill Mines, Nova Scotia, collected by Mr. Lee Russell, 1898. Several fine slabs of fossil plants, comprising six genera and as many species from the Cumberland Coal Field.

Collections  
examined.

“ Supposed organisms from opposite the Mouth of Mactaquac River, a tributary of the St. John River, Lower French village, county of York, N.B., collected by Prof. L. W. Bailey.

“ From Shaw's Mills, Beccaguimic River, collected by Prof. L. W. Bailey. A small series of imperfect Cambro-Silurian fossils from the semi-crystalline and dark-coloured limestones of the valley.

“ Preliminary studies have also been made of collections from the Cambro-Silurian limestones of the Lower Ottawa, collected by Dr. Ells and Dr. Ami.

“ Dr. Ami also determined and kept records of collections brought in from time to time by various persons in the Ottawa valley, and elsewhere. Some of these have proved interesting and useful to the Department. Among these may be mentioned several collections from the Utica, Trenton and Black River formations of Billings's Bridge, obtained by Mr. W. Roger of Billings's Bridge, and a number of specimens from the Devonian and Silurian of Western Ontario. Notes on the palaeontology of the district, also, were prepared for Prof. Bailey's report on South-west Nova Scotia.

“ Amongst other collections examined later in the year may be mentioned, one obtained by Mr. W. J. Wilson, in a rock-cutting on the railway six miles north of Canterbury station, N.B. The rocks here

had previously been referred to the Cambro-Silurian, but some nine species of Silurian fossils have been recognized. These are noted on p. 137.

Museum work.

“A good deal of time was also given to work more or less directly connected with the museum, in part relating to specimens which have been acquired, and in part to others sent to specialists for examination. Samples of borings derived from several deep wells in Western Ontario, have also been examined and such information given as would serve to show the various geological formations penetrated by the drill, the approximate thickness of these formations, as well as the formations which lay below those traversed—with special reference to the occurrence of petroleum or gas.

Drillings examined.

“A good deal of time was also devoted to the arrangement, cataloguing and indexing of the Ethnological collections in the museum.

“In the spring, in consequence of illness, it became necessary for Dr. Ami to obtain leave of absence for three months. On his return to duty, he was assigned to field-work during the summer, upon which he makes the following provisional report:—

Duck Islands, Lake Huron.

“From July 15th to August 4th my time was occupied in the Duck Islands, and in the south-eastern portion of the Grand Manitoulin Island from Providence Bay to Owen Channel, Lake Huron, for the purpose of ascertaining whether evidence existed on which to determine the occurrence of rocks belonging to the Guelph formation in that part of the province of Ontario. The five islands that form the group called the Duck Islands, include Great Duck Island, Little Duck Island, Middle Duck or Gravel Island, Inner Duck or Thibeault Island, and Western Duck or Ile au Sable. These islands were all visited, and the first two were traversed in several directions, but no outcrops belonging to any of the Palæozoic formations were observed. The following notes bearing on the general structure and formation of the islands, however, were made:—

“The Duck Islands owe their present topography and aspect to the presence of partially eroded masses or accumulations of boulder-clay, more or less irregularly surrounded by zones or fringes of gravel and water-worn boulders of various sizes, with here and there occasional masses or deposits of sand and gravel, all of Pleistocene age.

Boulder-clays.

“The boulder-clay or till which is so extensively developed in the escarpments and higher levels of Great Duck Island, also on the south-east corner of Little or Outer Duck, and probably also in the central nucleus or axis of each of the other islands—underlying the sands and gravels found there to-day and resting probably on the Niagara—is

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composed in large part of Archæan boulders mixed with a fair proportion of limestones, mostly of Silurian age. The materials which make up the boulder-clay, appear, largely, to have been carried by land-ice clear across the North Channel and the Grand Manitoulin Island, being derived from the Huronian and Laurentian rocks so characteristic of the islands of the North Channel and the mainland north of that channel.

“One of the best exposures of boulders from the till is to be seen at the south-eastern point and eastern side of Little Duck Island, where they have been freed from the till or boulder-clay by the water. These pebbles consist of white quartz, conglomerate, quartzite, jasper conglomerate, huronite and diorite, syenite, hornblendic, micaceous and granitoid gneisses, diorite, pegmatite and greenstones. These are often distinctly striated or polished, and vary in size from pebbles a few cubic inches in volume, to large masses containing fully 200 cubic feet of rock. Limestone pebbles of light yellowish-gray or drab colour and beautifully striated and polished, also occur in tolerable abundance with other *débris*; the greater portion of this limestone being evidently referable to the Niagara division of the Silurian, as developed in the more compact and heavy-bedded portion of that formation, on some parts of the Grand Manitoulin Island. Deposit of boulders.

“The till or boulder-clay of Great Duck Island, forms a rather bold and prominent ridge or bluff, that rises to a height of nearly 150 feet above the level of the lake at the northern fifth of the length of the island, and maintains a generally level surface and even trend as far as the southern third of the length of the island, from which point the surface slopes gently down to the shore; the southern part of the island being almost entirely made up of post-glacial deposits, or of fringes or zones of boulders washed out of the boulder-clay of the district, and redeposited around the shores of the lake at various periods and different levels, so as to form conspicuous zones of raised beaches at several heights above the present lake-level. Boulder-clay.

“Sand Point, the extreme north-east part of this island, is occupied by conspicuous sand-hills or dunes, of æolian origin, which extend over an area covering not less than one square mile.

“On the western side of this island and in the northern half of this side, lies Sand Cove or Horse-shoe Bay. This bay is surrounded on all sides by a fringe of sand-hills or dunes, especially at its eastern extremity. Evidence of the rapid accumulation of boulders in the south-eastern end of Great Duck Island, was noticed in several localities, but more particularly is this phenomenon observable in two prominent Sand-hills.

Beach accu-  
mulations.

features :—(a). At and near a wooden pier or wharf erected some 25 years ago, on the east side of Great Duck Island, opposite the fishing station on Outer Duck. The pebbles or boulders of the beach have been accumulated to such an extent along the shore and pier as to cover the sides and face of the landing and completely interfere with its use. (b). At the south-eastern extremity of Great Duck Island, there is to be seen a body of water, not indicated in existing maps, one mile long and three-quarters of a mile wide. This lake, whose waters lie some ten feet above the present level of Lake Huron, is formed by the closing up of the mouth of a bay, which at one time existed in this portion of the island. This bay was bounded on the east and west by two bars or low gravel ridges, that owe their origin to the accumulation of boulders derived from the glacial deposits of Little Duck and Great Duck islands. There are also seen here zones of boulders, forming raised beaches that occupy the greatest proportion of the land area in this part of the island. As many as fourteen separate zones or fringes of rounded and polished boulders, forming raised beaches, can be counted at Lighthouse Point, from the shore north, in distance of 400 yards. These zones are not regularly concentric one to the other, but coalesce or anastomose. The Manitoba Shoal, consisting of an accumulation of rounded boulders closely packed together, lies one-quarter of a mile north of Great Duck Island. The strong currents that prevail in the channel between Little Duck and Great Duck islands and also along the southern extremities of these islands, together with the storm-waves of the lake, play an important part in the building up of these fringes of boulders.

Manitoba  
Shoal.

“ These islands were probably submerged below the lake in post-glacial times, and during the period of uplift, the cliff aspect of the central or axial portion of the Great Duck, was produced by waves acting at a higher level than the present.

Middle Duck.

“ Middle Duck or Gravel Island, is only a few feet above the present lake-level, and consists for the most part of post-glacial sands and gravels, probably covering denuded portions of the till or boulder-clay of the island in glacial times. The island supports a luxuriant forest of vigorous young white and black spruce. Western Duck or Ile au Sable, is also a flat, low-lying island, fairly well wooded with conifers and occasional poplars, with sandy and gravelly shoals showing boulder bars or ridges, prominent especially at the southern extremity. One bar extends a long distance into the lake. Inner Duck or Thibeault Island is the smallest of the group, is flat, and supports a forest of conifers, mostly spruce.

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“The soil on Great Duck Island is varied and in the higher parts supports a rich forest of hardwood trees, maple, birch and beech, whilst in the more sandy and marginal low-lying parts of the island, conifers, including white pine, white and black spruce, cedar and other trees abound. Hay, oats and other farm crops can be raised, while small fruits flourish, and an abandoned orchard with blue plums and apples carried an abundant crop when visited.”

Character of  
soil and trees  
on Great  
Duck Island.

“In order to ascertain precisely to what geological horizon to assign the rocks that crop out on the extreme southern shore of the Grand Manitoulin Island immediately north of the Ducks, Burnt Island and Green Bay and Point were visited. At the former locality the following fossils were obtained, which indicate the presence of a coralline limestone referable to the Niagara formation and not very high up therein:—

Grand Mani-  
toulin Island.

*Halysites catenulatus*, (both the large and small variety).

*Syringopora verticillata*.

*Syringopora*, sp., with large corallites : probably *S. multicaulis*.

*Favosites Gothlandica*.

*Favosites Niagarensis*.

*Eridophyllum*, sp.

*Strombodes*, sp., with large corallites.

“These species are all characteristic of the Lower Niagara, and whereas the beds here, along the lake-shore at Burnt Island, are practically horizontal, and the Niagara formation as developed in the Grand Manitoulin Island is known to be at least 250 feet in thickness, it follows that, if no great faulting or dislocation occurs in the Silurian strata between the mainland and the Ducks, the formation underlying the Duck Islands is probably also referable to the Niagara.

“A careful examination was next made of four areas of Silurian rocks along the southern shore of the Grand Manitoulin Island, with a view of ascertaining if the Guelph formation of Ontario occurs on that island. The rock formations north and west of Michaels Bay, at Michaels Bay and east as far as South Bay Mouth post-office, between South Bay Mouth and the ‘Slash,’ and again between the Slash and Tekummah P.O., were examined, and throughout this entire area, as far as I could find, not a single characteristic species of the Guelph formation occurs, while abundant evidence was noted to refer the rocks of the whole area to the Niagara formation.

“Through the kindness of Mr. William J. Stewart, Chief Hydrographer, I was enabled to visit the west point and shore of Thomas Bay, the east shore of the same bay, the lake-shore east of Thomas Bay, also Perseverance Island, Cove Island and Flowerpot Island

Islands  
examined.

where evidence was obtained which will enable the geological horizon to be satisfactorily determined.

“ I have to acknowledge my further indebtedness to Major Gourdeau, Deputy Minister of Marine and Fisheries, to Capt. McGregor of the steamer *Bayfield* ; to Messrs. W. Purvis, of Great Duck lighthouse ; John Bain, of Outer Duck fishing station and W. Irving, of South Bay Mouth, for valuable assistance.

Work in  
Nova Scotia.

“ In pursuance of instructions received, I left Ottawa for Nova Scotia on August 10th, to continue the palæontological examination of some of the rock series in that province ; proceeding in the first instance to the typical sections of the Horton formation in the vicinity of Wolfville.

Silurian  
strata.

“ Near the head-waters of Angus Brook, an interesting contact of two distinct formations is exposed. The older and underlying series consists of fine-grained red, green and mottled slates, cleaved and indurated, dipping at a high angle to the south-east, associated with beds of coarser material and sandstones. The slates hold abundance of *Dictyonema Websteri*, originally described from Beech Hill and New Canaan, near Kentville. These slates are overlain unconformably by about 250 feet of soft, unaltered and almost horizontal arkose sandstones and conglomerates, the pebbles of the conglomerate layers being made up for the most part of gray glossy slates and quartzites—generally of small size and rounded. The *Dictyonema* slates have been referred to the Silurian system, and from a locality about ten miles south-west of Angus Brook, Sir J. Wm. Dawson described certain coralline limestones, of Wenlock or Niagara age, associated with these slates, so that the Silurian age of these *Dictyonema* slates seems probable—the species resembling in many particulars the *D. reteformis*, of Hall, from the Silurian of Ontario and New York State. From the drab and dark-gray and black shales that overlie the arkose sandstones, an interesting series of fossils was obtained, including fine examples of *Cyclopteris (Aneimites) Acadica*, Dn., *Lepidodendron corrugatum*, Dn., besides ostracoda and fish remains.

Horton forma-  
tion.

North shore  
Minas Basin.

“ Some time was also spent in examining the numerous outcrops of fossiliferous strata along the north shore of the Basin of Minas, at Parrsborough, at McKays Head, Moose Creek, and particularly along the Harrington River. Foot-prints of Amphibia were found in abundance both at Parrsborough, near West Bay north-west of Partridge Island, and along the Harrington River. These are referable to the genera *Hylopus* and *Sauropus*. From the palæontological evidence obtained from the rocks in question on the Basin of Mines, I am now convinced that these rocks should be referred to the Carboniferous system. As pointed

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out in reporting on my work last year, these same rocks, in other parts of the province hold a fauna and flora which has a decidedly Carboniferous facies. The ground upon which these rocks had been referred to the Devonian system was that they belonged to the same horizon as the fern ledges of Lancaster, New Brunswick, but these in turn may be said to hold a similar assemblage of forms with a decided Carboniferous facies. To whatever horizon the Lancaster plants are assigned, the rocks of the Harrington River, Riversdale and Union, and possibly of the Horton formation also must, it would appear, be assigned.

“Regarding the general results of this Devono-Carboniferous problem from a palæontological standpoint. It would appear, in reviewing the value and amount of the evidence afforded by fossils obtained during the past three seasons, that, in so far as the faunas are concerned, they clearly indicate a Carboniferous facies. These faunas include :—

“*Insecta*.—The remains of a large wing of one of the Neuroptera has been submitted to Prof. Charles Brongniart, who states that it is referable to a well-known Carboniferous genus.

“*Phyllopoda*.—The occurrence of typical examples of the genera *Leaia*, *Estheria* and related genera of phyllopods, which all the world over are recognized as Carboniferous, also point to the Carboniferous age of the rocks in Canada, from which the above forms were obtained.

“*Xiphosura*.—This sub-class of Crustacea is represented in my collections by three small but eminently characteristic specimens belonging to the genus *Prestwichia*—a Protolimuloid, usually referred to the Carboniferous system.

“*Podophthalmata*.—This sub-class of the Crustacea, is represented by numerous examples of a genus allied to *Anthrapalaemon* of the Coal Measures, but as yet undescribed.

“*Amphibia*.—Numerous tracks, footprints, etc., of large-sized reptiles whose hind feet at least were furnished with five toes, occur in the collection. Some are referable to Lea's genus *Sauropus*, others to Sir. J. Wm. Dawson's genus *Hylopus* of which *H. Loganii*, as represented in the collection at Ottawa, is the type. All the species of *Sauropus* previously described from North America are placed in the Coal Measures.

“*Lamellibranchiata*.—Numerous examples occur in the collections from the rocks under consideration which are clearly referable to the genus *Anthracomya*, Salter (= *Naiadites* Dn.) which genus also is characteristic of distinct zones or horizons in the Carboniferous and is closely related to forms known to occur in the undoubted Carboniferous of the Sydney, Pictou and Cumberland coal-fields of Nova Scotia.

Résumé.

“From the evidence thus far obtained, it would appear that in Nova Scotia the Carboniferous period began with shallow water conditions, producing the shales, sandstones, mudstones, marls, and grits of the Riversdale and Union series. The frequently ripple-marked and littoral character of these beds seems to indicate rapid submergences at the time of deposition and accounts for their great thickness. The fauna and flora of these series, as regards genera, are closely related to those characterizing the higher series of shales and sandstones that is separated from them by the marine Carboniferous limestone. The similarity, in my opinion, is so close, as to indicate that the whole different formations should be placed together in the geological time-scale as parts of the Carboniferous System.

“Further researches were carried on in Antigonish county, at McAra Brook and in the Lochaber Lake region—from which interesting suites of fossils were obtained.

Bone-beds,  
Antigonish  
Co., N.S.

“The bone-beds of McAra Brook, holding crustacean and fish remains, were again examined and additional examples were obtained of a *Pteraspis*, which appears to be new (the genus having been identified by Dr. A. S. Woodward) and fragments of cephalaspidian and acanthodian species, besides indications of *Pterygotus*. The occurrence of *Pteraspis* and *Pterygotus* indicate that the beds at McAra Brook, above and below the post-road, are referable to the summit of the Silurian system or the lowermost portion of the Devonian.

Work by Mr.  
L. M. Lambe.

“Mr. L. M. Lambe reports as follows :—

Palæozoic  
corals.

“The revision of the fossil zoantharian corals, to which reference was made in the Summary Report of 1897, was proceeded with during the earlier months of the past year. Considerable progress has been made therein. The two groups of the *Zoantharia* now being studied, viz., the *Aporosa* and the *Rugosa*, include eight families known to occur in the Palæozoic rocks of Canada and are represented by twenty-six genera, embracing over one hundred species. Of these species all but nineteen have so far been revised. Special attention has been paid to the internal structure of the corals and all available material has been examined with care. I am under many obligations to Professor H. Alleyne Nicholson, who kindly lent for examination a number of the type specimens and thin sections that were used in the preparation of his two reports upon the Palæontology of Ontario, 1874 and 1875. Thanks are also due to Sir J. Wm. Dawson for having placed at my disposal some types from the Lower Carboniferous rocks of Nova Scotia, the property of the Redpath Museum, McGill University, Montreal.



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“ During the past year the collection of recent marine sponges from the Atlantic and Pacific coasts has been placed in proper jars and all the specimens have been relabelled. A small series of sponges from Behring Sea, collected by Dr. Leonhard Stejneger, has also been examined and the specimens named for the Smithsonian Institution, Washington. Recent marine sponges.

“ Drawings of a number of fossils from the Hamilton formation were made for plates XLVIII, XLIX and I, illustrating part V, volume I, of the Contributions to Canadian Palæontology.

“ In pursuance of instructions to make further collections of fossils from the Cretaceous rocks exposed along the Red Deer River, Alberta, I left Ottawa for the North-west early in July. During the season of 1897, collections had been made by me from the rock-exposures on the Red Deer River from Red Deer village to Dead Lodge Cañon, a distance of about two hundred miles, in which the Laramie, Pierre and Belly River formations are successively exposed. The work of last summer was, however, confined to the area of ‘bad-lands’ lying between the mouth of Berry Creek and Dead Lodge Cañon, where it had been found that good results could be obtained, the main object of the work being to make a thorough search for dinosaurian and other organic remains in the rocks of the Belly River formation. Medicine Hat was selected as a starting point. From this place, where provisions were obtained and two men engaged, the Red Deer River was reached by wagon on the evening of July 24th and camp pitched opposite the mouth of Berry Creek. Here the ‘bad-lands’ extend along the river for seven or eight miles, running back on each side a distance of from three to four miles from its banks, and forming an almost circular area, through the centre of which the river flows. It had been intended to follow down the river on either side, camping at convenient points in order to facilitate collecting, but it was found that on the south-west side dry water-courses allowed of the passage of a wagon for a distance eastward of only from about one and a half to two miles, while on the opposite side any movement except on foot was prevented by the broken character of the ground. A month was spent in examining the numberless buttes and the labyrinth of deep coulées, a fortnight being given to either side of the river. Red Deer River district, Alberta.

Owing to the weight of the larger bones and the distance from camp at which most of them were found, the difficulty of collecting was very much increased, as they had to be carried to camp in an improvised stretcher often for some miles and over extremely rough ground. Of the fossils secured, in number dinosaurian remains and those of turtles predominated, fish remains and those of crocodiles being very scarce, as Bad-lands.

were also fossil leaves, although silicified wood with the structure well preserved was everywhere abundant.

Collections  
made.

“The material secured during the past summer, together with that obtained in 1897, affords a comprehensive representation of the vertebrate fossils and plant remains of the Laramie, Pierre-Fox Hill, and Belly River formations in the Red Deer River district. By far the larger number of fossils were, however, secured from the Belly River beds, which are especially interesting, as representing a terrestrial fauna separated from that of the Laramie by the thick marine beds of the Pierre.

“The collection will require careful study before it can be definitely reported on, but a preliminary examination renders it possible to assign some of the remains with a tolerable degree of certainty to genera or even species already described. Much of the material is believed to represent new forms.

“The principal specimens in the collection belong to the class *Reptilia* and represent the three orders *Chelonia*, *Crocodylia* and *Dinosauria*. The remains of the last, in point of number, far exceed those of the other two orders and form the greater part of the collection.

Reptilian  
remains from  
the Belly  
River forma-  
tion.

“Considering first the fossils from the Belly River formation, the following provisional enumeration may be made of them :—

1. *Chelonia* :—

Fragments of the dorsal and ventral shield of *Plastomenus coalescens*, Cope.\*

2. *Crocodylia* :—

Parts of the rami of mandibles of a species of *Bottosaurus*, Agassiz.

3. *Dinosauria* :—

a. Numerous maxillæ and rami of mandibles and some of the principal bones of *Trachodon mirabilis*†, Leidy.

b. A maxilla with teeth, a separate tooth and a right ramus of a species of *Triceratops*, Marsh.‡

c. Separate teeth and terminal phalanges of *Laelaps incrassatus*,|| Cope.

d. The upper part of the cranium of a species of *Nodosaurus*, Marsh.

\*Report on Geology and Resources of the Forty-ninth Parallel, by G. M. Dawson, 1875, appendix B, p. 337.

†Proceedings of the Academy of Natural Sciences of Philadelphia, vol. VIII., p. 72, 1856.

‡American Journal of Science and Arts, vol. XXXVIII., 1889, p. 173; also Sixteenth Annual Report of the United States Geological Survey, 1896.

|| Proceedings of the Academy of Natural Sciences of Philadelphia, October, 1876, and December, 1876, p. 340.

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“Of the remains referred to *Plastomenus coalescens*, a species described by Cope from fragments collected by Dr. G. M. Dawson from the Fort Union (Laramie) Cretaceous in the ‘bad lands,’ south of Wood Mountain, Assiniboia, the following may be mentioned specially :—

“A costal plate with a surface ornamentation of shallow pits separated by distinct reticulating ridges. It is ten inches long, with an average thickness of between five and six lines; two inches broad at its inner end and four inches in breadth at the outer end, where it terminates in a thin bevelled edge. Turtle remains.

“A large fragment, about sixteen inches broad and thirteen inches long, of the anterior end of a plastron, that had an entire breadth, when perfect, of not less than two feet. It exhibits definite deep sutural markings, is sculptured similarly to the costal plate and in outline is rounded in front and deeply concave on either side. It is about four inches thick in the central part and about an inch and a-quarter thick at the margin. Mr. R. G. McConnell, in 1882, also obtained fragments of the plastron of this species from the Belly River beds of this district. According to Lydekker\* the genus *Plastomenus*, Cope is not properly distinct from *Trionyx*, Geoffroy. Plastomenus

“Besides the above, are marginal parts of both ends of a single plastron of the same species, fragments of shell that may represent other species, and vertebræ, terminal phalanges and numerous other bones of the endoskeleton of turtles.

“The remains of *Crocodylia* consist of a few small deeply pitted oblong or oval, apparently non-articulating plates and fragments of mandibles. The most perfect specimen of the latter consists of the anterior part, five and a-half inches long, of the left ramus of a mandible with the symphysis, showing sixteen sockets for teeth the roots of which in a few cases remain. Crocodylian remains.

“Cope has described a species *Bottosaurus perrugosus*,† from the Fort Union (Laramie) group of Colorado, from portions of jaws that strongly resemble those from the Red Deer River. Zittel places this genus with the *Alligatorida*, to which family he assigns also the genera *Diplocynodon*, Pomel, and *Alligator*, Cuvier, the latter being a living genus.

The *Dinosauria* are represented by well preserved separate parts of jaws, horn-cores, bony scutes (some of large size,) vertebræ, ribs, a perfect sacrum and parts of sacra, limb-bones, the largest of which is a femur four feet in length, and many other bones. Dinosaurian remains.

\* Manual of Palæontology by H. Alleyne Nicholson and Richard Lydekker, third edition, 1889, vol. II., p. 1118.

† The Vertebrata of the Cretaceous Formations of the West. Rep. U. S. Geol. Surv. of the Territories vol. II., 1875.

Genera represented.

“The greater number of maxillæ and separate rami of mandibles, in some of which the teeth are beautifully preserved, are referable to the genus *Trachodon* (*Hadrosaurus*), Leidy, and probably also to the original species of the genus *Trachodon mirabilis*, Leidy,\* from the Upper Cretaceous (Judith River or Laramie) beds of Nebraska, U.S.A. This genus and species were founded on specimens of teeth discovered by Dr. F. V. Hayden in the bad lands of the Judith River, Nebraska. The genera *Diclonius*, Cope, and with less certainty *Thespesius*, Leidy, are regarded by some authorities as synonymous with the above genus. *Cionodon*, Cope and *Claosaurus*, Marsh, are two other upper Cretaceous genera closely allied to *Trachodon* and characterized by the same type of dentition.

“Within an area twelve feet square, a number of bones representing the remains, no doubt, of a single individual were found. They are as follows :

Remains of *Trachodon*.

“An almost entire fore-leg represented by a humerus (two feet four inches long), an ulna and a radius (both about two feet four inches long), a metacarpal (one foot long), phalanges, and terminal phalanges (from three to four inches broad) found together in their proper relative order and indicating an individual of large size. With these were a rib (three feet six inches long), portions of vertebræ and fragments of jaw holding teeth of the *Trachodon* type, as well as parts of the ossified rod-like tendons of the median dorsal region, resembling those referred to and figured by Marsh in his description of *Claosaurus annectens*† from the Upper Cretaceous of Wyoming. With the above occurred other bones, viz. a second humerus, a number of ribs, vertebræ and some of the large bones of the hind legs, but it was impossible to remove them, as they were in a crumbling condition. The characters of the teeth suggest an individual that probably belongs to the species *Trachodon mirabilis* or is nearly related to it. The humerus, ulna and radius bear a strong resemblance to corresponding bones of *Trachodon Foulkei*, Leidy,\* a species from the Upper Cretaceous of New Jersey, closely allied to the western form.

Triceratops.

“The second species of herbivorous dinosaurian is represented by a well preserved left maxilla with teeth in place. With these may be grouped, as probably belonging at least to the same genus, an almost perfect right ramus of a mandible, sixteen inches long, without teeth in the sockets, and a separate tooth having two roots. These specimens

\*Proceedings of the Academy of Natural Sciences of Philadelphia, vol. VIII, p. 72, 1856.

†First described in 1890, from a specimen obtained by Professor Marsh in 1872 from the Cretaceous of Kansas and referred to at length in the Sixteenth Annual Report of the United States Geological Survey, part I., 1896.

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are referable probably to one of the genera of the *Ceratopsidae*, and judging from the teeth most probably to the genus *Triceratops*, Marsh\* (said to be synonymous with *Agathaumas*, Cope).

“A third species of dinosaurian from the Belly River formation is represented by teeth and terminal phalanges that are referable to the carnivorous species *Laelaps incrassatus*, Cope. Laelaps.

“Taking into consideration the prevalence in the exposures of the Belly River formation on the Red Deer River of undoubted *Trachodon* remains and the scarcity of those that represent other genera, it is presumed that the majority of the larger bones that were found in this district separately or in twos and threes are referable to *Trachodon*. Among the larger bones of the collection are the following:—  
A complete sacrum, two feet seven inches long and seventeen inches broad at its widest part, having nine co-ossified vertebræ, and the two ends of a second sacrum that was three feet long and entire, but of which only the ends were secured owing to the fragility of the specimen. A number of femora, the largest of which is slightly over four feet long, several tibiæ of which two are three and a-half feet long, an ilium and a perfect biconcave caudal vertebra, all strongly resembling the corresponding bones of *Trachodon Foulkesi*, Leidy. Reference of large bones.

“There are also many vertebræ a scapula, and a large number of other bones not yet definitely referred.

“A number of horn-cores and bony scutes of various sizes and shapes, the remnants of a protective covering, are of particular interest. Horn-cores.  
With one horn-core, a foot long and between four and five inches in diameter at the base, to which a small portion of the skull remains attached, was found parts of a maxilla with teeth of the *Trachodon* type. Judging from the want of bilateral symmetry in this horn-core, it is reasonable to suppose that two horns, one on either side of the median line of the head, proceeded upward from the top of the skull; also, from the association of teeth of this type with the horn-core, it would appear that the species of *Trachodon* here represented, (possibly *T. mirabilis*, Leidy,) which with its allies have been supposed to be hornless, had well developed and formidable horns. The largest dermal (?) scute, one foot five inches long, seven inches broad and seven inches thick, consists of an asymmetrical massive base that is prolonged in front into a stout sharply-pointed spine directed slightly to one side.

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\*Proceedings of the Academy of Natural Sciences of Philadelphia for 1858, vol. X. p. 213.

"A slender bone three feet seven inches long, supposed to be an ischium, is very similar in size and general proportions to the corresponding bone of *Claosaurus annectens* as figured by Marsh (*op. cit.*).

Head ar  
tur

"A specimen that appears to be the upper part of the cranium of a dinosaur was found at the mouth of Berry Creek, and with it were a number of large sharply keeled plates that evidently formed part of a dermal armature. The former measures ten inches in length by nine inches in breadth, and is covered above and on the sides with flat bony plates. The dermal plates are about six inches long and three and a-half inches high, each being hollowed out behind, presumably for the reception of the anterior border of the plate immediately following. The dinosaur represented by these remains may have been a Cretaceous representative of the genus *Scelidosaurus*, and perhaps nearly allied to *S. Harrisonii*, Owen, from the Jurassic of England. The surfaces of the bony plates covering the Red Deer River specimen, show markings similar to those noticed by Marsh and described by him as characteristic of the ossicles of *Nodosaurus textilis*\* a Cretaceous species of a genus of *Stegosauria* related to *Scelidosaurus*.

Reptilian  
remains from  
the Laramie  
formation.

"The more important specimens from the Laramie series consist almost entirely of dinosaurian remains, and are more fragmentary as well as fewer in number than those from the Belly River beds.

"The order *Chelonia* is not represented amongst the specimens from the Red Deer River, but in 1881 Dr. G. M. Dawson collected from exposures of the Willow Creek (Laramie) beds on the Oldman River, Alberta, fragments of a plastron that are apparently of the same species with the specimens from the Belly River series of the Red Deer River, referred above to *Plastomenus coalescens*, Cope.

"No crocodylian remains were found in the rocks of this formation.

Dinosaurian  
remains.

"The bones collected in 1897 include, besides vertebræ and a number of broken femora and tibiæ, a very large tibia, four feet long, and the distal or lower end of a femur, that, judging from its breadth (sixteen inches), must have had a length in the neighbourhood of five feet. Most of these bones are thought to belong to *Trachodon mirabilis* on account of their resemblance in structure to corresponding ones from the Belly River beds.

"Fragments of jaws of *Trachodon mirabilis*, with teeth in place, were collected by Mr. T. C. Weston in 1881 on the Red Deer River in range XXI, township 32, west of the fourth principal meridian.

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\**Vide* Sixteenth Annual Report, United States Geological Survey, part I, page 225, pl. lxxv, fig. 5.

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"In 1882 Mr. R. G. McConnell obtained a femur three feet ten inches long, from the Laramie of Scabby Butte, Alberta. It appears also to be referable to *Trachodon mirabilis*.

"Previous to 1897, the collection of dinosaurian remains from the Laramie beds of the Red Deer River included a skull of *Laelaps incrassatus*, Cope, obtained by Mr. J. B. Tyrrell in 1884 on the west bank of Knee Hills Creek about three miles from its mouth, and a jaw of the same species collected by Mr. Weston in 1889 on the east bank of the Red Deer River at a point about twenty-one miles above Knee Hills Creek. These specimens were submitted for examination to Professor Cope \* who referred them to his species described in 1876 † from teeth derived from the Fort Union (Laramie) formation of Montana and described more fully in the same year from a dentary bone from the same region.

"Comparing the reptilian remains from the Belly River beds with those from the Laramie, it would appear that there are probably three species common to both formations, viz.—*Plastomenus coalescens*, *Trachodon mirabilis* and *Laelaps incrassatus*, also that these are the three forms most abundantly represented in the collection. Remains of *Plastomenus coalescens* seem to be not uncommon in both formations, those of *Trachodon mirabilis* are abundant in the Belly River rocks but are not often met with in the Laramie, whilst the reverse is the case with those of *Laelaps incrassatus*. Comparison of  
faunæ.

"In concluding his report on 'The Invertebrata of the Laramie and Cretaceous Rocks of the vicinity of the Bow and Belly rivers and adjacent localities in the North-west Territory ‡' Mr. Whiteaves gives it as his opinion that 'the invertebrate fauna of the Belly River series seems to be essentially the same as that of the Laramie of the United States and Canada, unless more than one formation has been confounded under the latter name.' This expression of opinion is corroborated to a certain extent by a preliminary review of the vertebrate-faunæ of the same formations.

"Toward the latter part of September, a visit was made to Muirkirk, Ontario, where it had lately become known to the Department that fossil elephantine remains had been discovered. The bones, which proved to be those of a mammoth, were purchased. Notes were taken on the circumstances attending the discovery of the bones, their posi- Mammoth  
remains in  
Ontario.

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\* On the skull of the Dinosaurian *Laelaps incrassatus*, Cope, American Philo-  
sophical Society, vol. XXX., 28th May, 1892.

† Proceedings of the Academy of Natural Sciences of Philadelphia, for October,  
1876, p. 248, and December, 1876, p. 340.

‡ Contributions to Canadian Palæontology, vol. I., p. 89, 1885.

tion relative to the deposits in which they were found and the physical features of their surroundings.”

Contributions to museum. The following is a list of specimens collected by or received from officers of the staff, during the year 1898 :—

Dr. R. Bell :—

About thirty fossils from the drift of the north shore of Lake Superior at Michipicoten.

J. B. Tyrrell :—

About a dozen pieces of slate with fragments of fucoids (*Bythotrephis?*) from seven miles north of Daltons Post, Unahani River, Yukon District.

Twelve specimens of Cretaceous plants from Nordenskiöld River, Yukon District.

Specimens of fossil wood from Alsek River, Yukon District.

Set of eggs of the Rock Ptarmigan from the summit of the Chilkat Pass.

W. McInnes :—

Skull of black bear (*Ursus Americanus*) from the Rainy River District, Ont.

Bone scraper from Mameigwess Lake, in the same district.

About forty pieces of Indian pottery collected by Mr. A. Boyer at the foot of the Long Sault Rapids, on the Canadian side.

Dr. H. M. Ami :—

A large number of fossils from the palæozoic rocks of Kings, Hants, Colchester, Cumberland, Annapolis and Antigonish counties, N.S., and from the vicinity of Courtnay Bay, N.B. Among them there is a series of reptilian and other footprints, referable to the genera *Sauropus* and *Hylopus*, from the Horton formation of Kings county and shales of the Riversdale series in Colchester and Cumberland counties.

About 200 Silurian fossils from various localities on Grand Manitoulin Island, Lake Huron.

A small collection of marine invertebrates from the shores of the Avon River, near the bluff at Horton Lighthouse, Nova Scotia.

Skull of Red Fox from Manitoulin Island, Ont.

L. M. Lambe :—

A large collection of dinosaurian, turtle and crocodilian remains from the Belly River formation of the Red Deer River in the neighbourhood of Berry Creek. It includes also a few fish and plant remains.



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A. E. Barlow :—

Contributions  
to museum—  
Cont.

Set of eggs of Loon (*Urinator imber*) from Loon Lake, Peterborough county, Ont.  
Three flint arrow-heads from Blackfish Bay, Kaminisseg Lake, Renfrew county, Ont.

J. McEvoy :—

198 specimens of fossils from the Devonian, Carboniferous and Laramie rocks at various localities in the Rocky Mountains, west of Edmonton.  
A number of skins of small mammals, a few bird skins and a set of the eggs of Townsend's Solitaire, collected by W. Spreadborough in the Rocky Mountains, west of Edmonton.

D. B. Dowling :—

Pale variety of the American Hare (*Lepus Americanus*)  
A fossil coral (*Diphyphyllum*) from the drift of the north shore of Lake Nipigon.

W. J. Wilson :—

About 250 specimens of Silurian fossils from the Silurian rocks six miles north of Canterbury station on the C.P.R., in Carleton county, N.B.

Prof. L. W. Bailey :—

Three small collections of fossils from the Palæozoic rocks at different localities in New Brunswick.

The additions to the palæontological, zoological and ethnological collections from other sources during 1898 are as follows :—

By presentation :—

(A.—*Palæontology.*)

Colonel C. C. Grant, Hamilton, Ont. :—

105 specimens of fossils from the Cambro-Silurian, Silurian, and Devonian rocks of Ontario.

U. S. National Museum, Washington, D.C. :—

Four specimens of *Chonetes vicina* (Castelneau) and one example of *Favosites Alpenensis*, Winchell, from the Hamilton formation of Ontario.

G. Kernahan, Thedford, Ont. :—

Thirty-five specimens of ten species of fossils from the Hamilton formation of Ontario.

Contributions  
to museum—  
Cont.

B. E. Walker, Toronto :—

Specimen of a large species of *Trochoceras* from the Corniferous limestone of St. Marys, Ont.

F. W. Wilkins, Norwood, Ont. :—

Specimen of *Asaphus (Isotelus) maximus*, (or *gigas*) from the Galena-Trenton limestone at Cat Head, Lake Winnipeg ; and one of *Corbicula occidentalis*, from the Laramie deposits of Alberta.

(B.—Zoology.)

U. S. National Museum, Washington, D.C. :—

Specimen of a rare calcareous sponge (*Grantia monstrosa*, Breitfuss) from Copper Island, Commander Islands.

Commander Wakeham, Ottawa :—

A number of marine invertebrata from Hudson Bay, collected by the "Diana" expedition.

Richard Shillington, City View, near Ottawa :—

Set of four Shrike's eggs from near Ottawa.

F. White, Comptroller N. W. Mounted Police, Ottawa :—

Head of Wood Buffalo, from near Athabasca Lake.

John Fannin, Provincial Museum, Victoria, B.C. :—

Set of five eggs of Gambel's Sparrow (*Zonotrichia Gambeli*), from Beacon Hill Park, Victoria.

W. G. Paterson, Thedford, Ont. :—

Specimen of the Star-nosed Mole (*Condylura cristata*) in the flesh.

D. Lee Babbitt, Fredericton, N.B. :—

Black variety of the Red Squirrel, shot on Miscou Island.

Dr. James Fletcher, Ottawa :—

Six shells of *Arianta Townsendiana*, from a farm at Salmon Arm, Shuswap Lake, B.C.

W. E. Saunders, London, Ont. :—

Sets of eggs of eight species of birds from various localities in Western Ontario.

L. M. Lambe, Ottawa :—

Skull of American Bison from Old Wives Lake, Assa.

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(C.—*Ethnology.*)

Contributions  
to museum—  
Cont.

Department of Indian Affairs :—

(From Mr. James Wilson, Indian agent on the Blood Reserve, N.W.T.) :—

Medicine-pole Bag willed by "Charcoal" previous to his execution, who wished it to be "placed in a museum."

N. J. Slater, Ottawa :—

Old iron axe head dug up at Clear Lake, ten miles above Eganville.

W. R. White, Pembroke, Ont.

Two copper adzes found in 1897, by workmen excavating in C.P. R. Co's. yard at Pembroke.

W. H. Robson, Lethbridge, Alberta (per J. B. Tyrrell) :—

Stone hammer found at Stonewall, Manitoba.

F. Dunn, Barrys Bay, Ont. (per A. E. Barlow) :—

Piece of Indian pottery and six stone adzes or scrapers, from Welshman Island, Barrys Bay.

P. Kelly, Carlow township, Ont. (per A. E. Barlow) :—

Stone gouge from Carlow township, Hastings county, Ont.

By exchange :

D. W. McDonald, Edmonton, Alta. :—

Skull of Musk Ox from roof of tunnel run in the north bank of the Saskatchewan, about one mile below Edmonton.

By purchase :

(A.—*Palæontology.*)

Remains of a mammoth found on the farm of Mr. Charles Fletcher, about a mile and a-half north-east of Muirkirk, Ontario, in 1895, as follows : Lower jaw with teeth in place ; upper molars with parts of cranium ; portions of the tusks ; a few vertebræ and ribs ; part of a scapula, two humeri, an ulna and radius, and all of the bones of the hind legs, except some of the smaller ones of the feet.

A fine series of specimens of "*Lituites undatus*," from the Black River limestone at the falls of the St. Charles River at Lorette, P.Q.

A number of choice fossils from the Levis limestone at Point Levis, P.Q.

Contributions  
to museum—  
Cont.

Five rare fossils from the Hamilton formation of Ontario.

Specimens of forty-five species of fossils from the Cambrian rocks of Newfoundland, many of which have been recently described and figured by Dr. G. F. Mathew.

187 specimens of fossil plants and insects, some of them undescribed, from the Devonian rocks at the Fern Ledges, near St. John, N.B.

(B.—Zoology.)

Albino or nearly albino Scaup Duck, from Whitewater Lake, Manitoba.

Male Saw-whet or Acadian Owl, (*Nyctala Acadica*) in dark-brown and not quite adult plumage, from the forks of the Blindman and Red Deer rivers, Alberta.

Two sets each of the eggs of the Great Black-backed Gull and White-throated Sparrow, and one set each of the eggs of the Olive-sided Flycatcher, Pine Siskin, Swamp Sparrow and Magnolia Warbler, from Nova Scotia.

One Osprey's egg from Nova Scotia, and one unspotted white Murre's egg from Labrador.

(C.—Ethnology.)

Ninety-four objects of Indian manufacture and three Indian skulls, collected by Dr. C. F. Newcombe at the Queen Charlotte Islands.

C. Hill-Tout, Vancouver, B.C.:—

Stone pipe from Lytton.

NATURAL HISTORY.

On the work done by himself, or under his immediate control, Professor J. Macoun reports as follows:—

Work done  
during winter  
of 1898.

“After the completion of my last summary report I spent the winter months writing a catalogue of the Water Birds of Canada, which includes notices of the breeding habits and geographical distribution of each species so far as known to us. The birds of Alaska, Greenland and Newfoundland, as well as those of the Dominion itself, have been included in order to render it as complete as possible.

“A good deal of time was also spent in working up the collections of cryptogams made in the Rocky Mountains during the summer of 1897.

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This with the regular routine of the office kept me fully employed until the spring was well advanced.

“My work on the Lichens of the Dominion was also advanced a stage by the collections of the preceding summer in the Rocky Mountains, and the question arose whether the ‘barrens’ of Cape Breton Island did not produce a lichen flora that would connect that of Quebec with that of Labrador.

“In accordance with your instructions I started for Cape Breton Island on the first of July last in order to make an examination of the flora of that part of Canada. In the summer of 1888 I made an examination of Prince Edward Island, forming a high opinion of its agricultural capabilities. This season’s work has convinced me, that, in regard to agriculture, the capabilities of Cape Breton have been much underrated. While on the island I travelled in a wagon to Margaree, Cape North and Louisbourg, besides making numerous minor trips. I collected extensively at all points. As a result of my two months work I brought back over one thousand species of plants, not one of which indicated a frosty summer climate.

“I had heard much of the ‘barrens’ of the north end of the island, and expected to find growing on this elevated plateau many plants identical with those of Labrador, but I failed to discover any. It is true there were lakelets, ponds, marshes, bogs and bare rocks with a very varied vegetation, but nothing more arctic than could be found within thirty miles of Ottawa.

“Along the north shore, at McNeil Harbour and Aspy Bay, I expected to find boreal vegetation, but failed just as completely as on the ‘barrens.’ Being still unsatisfied I examined the vegetation on Boulardarie Island, at both North and South Sydney, at Mira Bay, at Louisbourg and its vicinity, and although the whole region about Louisbourg was bathed in fog and gave evidence of almost continual saturation, yet boreal vegetation was wanting.

“Three years since, Dr. B. L. Robinson, curator of the Gray Herbarium at Cambridge, Mass., made extensive collections on Newfoundland along the line of the new railway. A set of these plants was presented to our herbarium, and they, too, point to a much better climate in southern Newfoundland than has generally been attributed to it.

“When I made my examination of Prince Edward Island, ten years ago, the agricultural standing of the island was not very high, although well cultivated in many places was wet and undrained and poor crops were being raised. Cheese making had been tried and had

failed and many of the farmers saw no prospect of bettering themselves. More light has since been shed on old methods, a new start in cheese-making has been made and Prince Edward Island has now over 300 cheese factories in successful operation.

Agriculture  
on Cape Breton  
Island.

"Agriculture is much more backward on Cape Breton Island now than it was ten years ago on Prince Edward Island. The cause of this is not, however, a climatic one. Its inhabitants are not an agricultural people, and consider farming as merely an adjunct to fishing, which was formerly very profitable, but now is too uncertain to make it the chief business. The mines have also drawn many from the land. On all parts of the island where cultivation is attempted I saw good crops. Oats, wheat, barley and potatoes were excellent, but much of the hay, which was the chief crop, was poor.

"Owing to inequalities of surface there are few level fields except in the valleys of streams, and a regular system of agriculture was not observed anywhere. Generally a farm consists of pasture and hay-meadow with patches of oats, barley or potatoes scattered about without any system. Although the meadow next to the oats produced poor hay which in many cases was chiefly ox-eye daisy (*Chrysanthemum Leucanthemum*), the oats were always tall and well headed, showing that the poor hay was not the result of poor soil but of want of culture. Everywhere I went it was painfully evident that agriculture was neglected on the island, and the people were falling into the belief that their soil could not compete with that of other lands in the raising of any kind of produce.

"Farming of a better class was found on Boularderie Island, but even there, vegetables and fruits were nowhere seen. The most notable thing on the whole island was the absence of gardens containing vegetables, and, dependent on this, the absence of vegetables on the table. I asked in many localities why the farmers raised no vegetables, and was told that formerly fish were traded for vegetables, and that as the fisheries became reduced vegetables were no longer obtainable.

Fruit, grain  
and vegeta-  
bles.

"As a result of my observations on the routes already noted, it appears that there is not only abundance of moisture both in the soil and atmosphere, but sufficient summer heat both by day and night to produce an extraordinary amount of growth in July and August. With the permission of Mr. Alex. Graham Bell, who owns 1100 acres on a point stretching into Bras d'Or Lake at Baddeck, I made a careful examination of his farm and gardens, and found that his was a real experimental farm. Wheat, oats, barley, potatoes and all kinds of vegetables were excellent, the only desideratum being better under-

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draining. There was a fine orchard with abundance of fruit, the only drawback being the too great growth of new wood, a circumstance paralleled, in so far as my experience goes, only in the Fraser valley in British Columbia, where a similar equable temperature and saturated atmosphere exist.

“ At Baddeck Mr. Blanchard also has both an orchard and a garden, and although the land is neither well drained nor well cared for, growth and production were wonderful. But with Mr. Bell's farm and Mr. Blanchard's garden as object lessons, scarcely any attempt is being made by others to improve the system of agriculture, and young people continue to emigrate to the New England States in search of inferior positions, while the natural resources of their own country remain undeveloped.

“ This state of things is, however, not likely to last much longer, as tourists from many parts of the United States and Canada are now becoming acquainted with the possibilities of the region.

“ As you are aware, I have had the opportunity of studying the vegetation of nearly every part of Canada, and from the relation of flora to climate I feel quite safe in predicting a great future for Cape Breton. Many years ago I spent some time in the Annapolis valley, and am satisfied that that part of Cape Breton Island about the Bras d'Or lakes is equal to the Annapolis valley as a fruit-growing country. Why the people have been so long in ignorance of their great opportunities and the capabilities of their country is not for me to say, but in the production of butter, cheese and beef Cape Breton should in each case show as good results as Prince Edward Island. Potatoes, which at present are largely imported from Prince Edward Island, are just as sure a crop in Cape Breton, and a similar amount of enterprise will produce equally good results in both places.

Climate suitable for fruit growing.

“ As to fruit-growing a few words more may be said : Mr. Blanchard of Windsor, Nova Scotia, a leading fruit grower there, was at a public meeting in Baddeck addressed by me last August. At this meeting I asserted that the Bras d'Or lakes were as well suited for the growing of apples as the Annapolis valley. After I had finished speaking, Mr. Blanchard said that he held opinions identical with my own, and hoped that he would live to see their proof.

“ According to Mr. Bell, the thermometer in winter never goes lower than 10° below zero, and often the Bras d'Or Lake is not frozen over until the end of January. The spring is late, but as the buds do not develop too early, this is really a safeguard against injury. The heat of summer is tempered by the adjoining waters, and in autumn it is maintained by the heated waters of the Bras d'Or Lakes. Middle

Equable temperature.

River, Lake Ainslie, Margaree district, and many other smaller areas are just as good as that specially referred to above, but the future of one and all lies in the education of the people to the possibilities of their country.

Distribution  
of trees.

“ The distribution of the trees of the natural forest is much the same in Cape Breton as that found elsewhere in the maritime provinces. Generally spruce and fir are found both on hill sides and level spots, but in all cases they are on land where the soil is impervious. These trees form the bulk of the forest vegetation in the vicinity of Baddeck, but in the interior of the island and in the northern peninsula much birch is mingled with them ; and beech and sugar-maple, though not so abundant, are also found in considerable quantity. The last-named trees are found chiefly on rocky slopes or on better drained soil than that on which birch grows. All the species of trees found on the island were vigorous, and in no case seemed out of range. When cleared lands are encroached upon by young growth, however, they become invariably covered with spruce and fir. This shows the necessity of draining in order to keep the land in a fertile state, suitable to the growing of crops. Unless this be done, no success can be expected.

“ Fine large red oaks (*Quercus rubra*), though few in number were seen on the north side of Smoky Mountain, nearly 1000 feet above the sea. On the plateau between Halfway House and Aspy Bay, a fine tract of old forest was passed through, where yellow birch and sugar-maple constitute a large part of the growth and many trees of a large size were seen.

Climate.

“ A word or two must be said of the Bras d’Or Lake and of the Little and Big Bras d’Or. Owing to the narrowness of the latter, cold sea-water can scarcely affect the lakes, so that there is an interior basin filled with warm water during the summer, which keeps the lands around it bathed night and day in an atmosphere in a more agreeable condition than that of any other locality I know of. The advance of the spring is slow, but the air is not chilled, nor does the temperature rise very high, so that there is every condition necessary to the growth of fruits requiring a fairly low summer temperature. Growth in July and August is luxuriant, and the long autumn without heat or frost is quite analogous to that which gives the Annapolis apples their high flavour and great market value.

“ The real mildness of the climate can be better understood when it is known that amongst other tender shrubs, grown by Prof. Bell, rhododendrons flourish, and are not in the least injured in the winter.



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These shrubs do not grow well in Ontario, except in the south-western peninsula, and even there success is not certain.

“ In the neighbourhood of Sta. Ann Harbour and at Louisbourg, certain species of plants were collected that seemed to have been introduced in the period of the French occupation. Amongst these are :—*Alopecurus pratensis* (French timothy), *Angelica sylvestris*, *Senecio sylvatica* and *Scabiosa succisa*. Introduced plants.

“ Before going to Cape Breton, I had, like many others, a very mistaken notion of the ‘barrens’ in the northern part of the island. After spending some time in the north and on the plateau, the conditions producing these barrens became evident. Along the base of the escarpment bordering the plateau, the subsoil is generally impervious, and here spruce and fir occupy the ground. The broken face of the escarpment is usually covered with broad-leaved trees, such as maple, beech and birch, because it is well drained.

“ The ‘barrens’ themselves are classified by the fruits they produce, as, blue-berry barrens, bake-apple barrens, etc., but the cause of all is the same. The soil is but a light covering and of a peaty nature. Owing to the impervious character of the rock below, all water that falls lies on the surface, producing marshes or peat-bogs, while the higher levels or slopes may be wet or dry forest or devoid of trees; in such cases they form ‘blue-berry barrens.’ The ‘bake-apple barrens’ are great bogs covered chiefly with *Rubus Chamæmoris* (the bake-apple) and a few ericaceous shrubs. Character of “Barrens.”

“ That this general statement is true is verified by the streams descending from the eastern side. These run in channels cut out of the granite, and have white sand in their beds and no mud, yet all the water discharged by them is dark-coloured and is nothing more nor less than the surplus bog water that has oozed over the rim of the various depressions at higher levels.

“ The ‘intervalles’ are the river-valleys, and these always have good soil, but during very high water are subject to overflow. Here the American elm (*Ulmus Americana*) attains a large size, and gives a more western character to the country than any other object. Here also are the best farms and the future seats of the cheese and butter industry which in the near future is certain to render Cape Breton wealthy. “Intervalles.”

“ My chief scientific work in Cape Breton was of course in connection with its flora. A number of interesting species were collected in various parts of the island, and some new points as regards distribution brought to light. An island flora is always interesting and the comparatively Natural History collections.

small number of species that were of general distribution goes to show that the majority of the forms were late comers, as very many of them were found in only one or two localities.

"In the ravines at the Big Intervale, were very many beautiful ferns, prominent among which were the Male fern (*Aspidium Filix-mas*) and Braun's fern (*Aspidium aculeatum* var. *Braunii*.) Dr. Geo. Lawson many years ago found the Male fern by Ste. Ann Harbour and on the slopes of Smoky Mountain, and here too the writer found it in abundance. Another of Dr. Lawson's finds—*Potentilla Tormentilla*—was observed by me at Port Bevis, very near where he collected it.

"Notes were made on the birds seen during the summer but no specimens were collected.

Autumn  
collections.

"Early in September I returned to Ottawa and at once commenced to collect and examine the fungi of the neighbourhood, working steadily at this until the season was closed by severe frost early in November. Over 600 species were collected, and the great majority were determined, but there still remain a number of undetermined forms which require study.

"Since the close of the collecting season I have been engaged in determining the mosses, liverworts, lichens and fungi collected while in Cape Breton.

Work of  
assistant.

"My assistant, Mr. J. M. Macoun, remained in the office during the whole year, his only collecting being in the vicinity of Ottawa. No general collection was made, his work in the field being confined almost entirely to the two genera *Viola* and *Carex*. Three species of violets new to science were discovered near Ottawa, and one that had not before been found in Canada. About seventy species of *Carex* were collected and identified.

Determina-  
tion of speci-  
mens.

"The routine work increases from year to year, and the number of specimens sent for determination has grown so large that much time is occupied in it. Small collections of a few species come from all parts of Canada, and during the year several collections of from 100 to 300 species have been determined. The specimens are often far from good and the time spent in determining them is frequently out of all proportion to the value of the information gained. I cannot, however, suggest any improvement in the way this work is now done, as from the most unpromising collections valuable information as regards the distribution of our plants is often obtained.

Work of local  
botanists.

"The most important botanical work now being done in Canada outside our own department, is on the east and west coasts of the continent. Mr. Lawrence W. Watson is working up the flora of Prince Edward Island, and Mr. J. R. Anderson, Deputy Minister of Agricul-

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ture for the province of British Columbia, is doing work on similar lines on the west coast. These gentlemen and others working with them have sent their difficult species to us for determination, and while we have been of some assistance to them, their work has added much to our knowledge of the distribution of Canadian plants.

"The botanists of South-western Ontario are also doing good work and from J. Dearness, Public School Inspector, London, Ont. ; Dr. J. Carroll and J. A. McCalla, St. Catharines, Ont. ; J. M. Dickson, Hamilton, Ont., and W. Scott, Head Master, Normal School, Toronto, we have received valuable contributions to our knowledge of the flora of Ontario.

"The most important collections made by Geological Survey parties were those brought in by Mr. Jas. McEvoy and Mr. J. B. Tyrrell. Mr. Spreadborough, who was attached to Mr. McEvoy's party, though without any special botanical knowledge, made excellent collections of the plants of the Rocky Mountains east and west of the YellowHead Pass, which may be considered to very completely represent the flora of that region. More than 500 species of flowering plants were brought back, besides many cryptogams. So far as his collection has been worked up, it includes only one new species, *Viola cyclophylla*. but the northern limit of many forms has been extended, and several plants were found by him that have not been collected since Drummond's time. His collection of skins, and notes on the fauna of the same region, add much to our knowledge of bird and mammal distribution. Mr. Tyrrell's collection of plants, though not large, included one species new to Canada and several that had not before been recorded from the Yukon District.

Geological  
Survey collec-  
tions.

"The records of new species and extensions of limits have been noted by my assistant and published either in the *Canadian Record of Science* or the *Ottawa Naturalist*. Reprints of these notes, as well as a list by myself of the cryptogams found in the vicinity of Ottawa, have been distributed to the principal natural history museums and the leading botanists of Europe and America.

Published  
work.

"So much time has been spent on routine work, that the accumulated material of our own collecting of previous years has not yet been worked up ; only 2515 sheets of specimens have been mounted, as follows :—

Canadian flowering plants.....	1,025
United States " " .....	466
Foreign " " .....	506
Cryptogams.....	518
	2,515

Plants distributed.

"The distributions from the herbarium have not been large, little time being available for this purpose. But 1740 specimens were sent out, nearly all of these being in exchange for specimens received in previous years."

Report by Dr. J. Fletcher.

Dr. James Fletcher, F.R.S.C., Entomologist and Botanist to the Central Experimental Farm, in his capacity as honorary curator of the entomological collections of the Geological Survey, contributes the following brief report:—

Entomological collections.

"I have the honour to report that the entomological collections are in good condition. The only additions made during the past year are some species from Banff collected by Mr. N. B. Sanson and some others collected by myself at the same place and in British Columbia. These referred to are all Lepidoptera. In addition I was glad to have an opportunity last autumn to secure a good series of Canadian specimens of the Rocky Mountains Locust (*Menaloplus spretus*, Uhler) together with some of its parasites. These were from southern Manitoba.

Lepidoptera at Banff.

"The collection of Lepidoptera for the Banff museum, made in accordance with your request, has been added to, and will, I trust, be of interest to the many visitors who call at the museum at Banff. Mr. N. B. Sanson has made some interesting captures. Mr. Dippie, of Toronto, has also presented a specimen of the rare *Agynnis astarte* for this collection, taken by him at Banff last summer. This species was taken in the Rocky Mountains early in this century by a collector sent out by Lord Derby; but the specimen was lost and the species was not again seen until re-discovered by Mr. I. E. Bean at Laggan a few years ago. That was the only known locality until Mr. Dippie took the specimen referred to, which, although in very poor condition, will serve to identify any captures that in future may be made at Banff.

"No collections were this year made by officers of the Geological Survey. If some of those who may go to the Yukon District could be induced to collect, every specimen sent in would be of extreme interest."

#### MAPS.

Maps.

Mr. James White, Geographer and Chief Draughtsman, reports as follows on the mapping work and related subjects:—

"During the past year Mr. C. O. Senecal has compiled the additions to the 'Three Rivers' sheet of the 'Eastern Townships' map, and

## Geological Survey Department.

to the 2nd edition of sheets I, II and III of the Yukon map, and Maps—Cont.  
autographed the map of the 'Corundum Belt.' Mr. L. N. Richard has compiled the Nottaway River map, completed the Western Nova Scotia map, and has made zinc-cut drawings for several reports. Mr. W. J. Wilson has been employed on the map of the Dominion, on general draughting work and has calculated the latitudes and departures of the surveys made by me last autumn. Mr. Wilson was detached from August 5th to October 25th to assist Mr. R. Chalmers in the area covered by the Fredericton sheet (1 N. W. New Brunswick). Mr. J. F. E. Johnston has completed the compilation of sheet 121, Ontario and Quebec. Mr. Johnston also assisted me in the field for a short time. Mr. O. E. Prudhomme has traced for the engraver seven plans of Nova Scotia gold districts, has been employed on the revision of portions of the map of the Dominion and has had charge of the stock of maps held for sale and distribution. Mr. W. M. Ogilvie was employed on general draughting work to February 28th, when he left to accept the position of mining engineer to a Yukon company. Mrs. Sparks has been employed on the cataloguing of the maps and plans since November 7th.

"There is at present a congestion of mapping work in the office, leading to delay in the preparation of several maps. An additional map-compiler is required to catch up with the work, particularly as the increasing demand for the maps of the Survey is rapidly exhausting them in certain districts, especially where mining development or prospecting is being carried on, necessitating the publication of revised editions of many of them. The additions and corrections required to bring these new editions up to date frequently involve almost as much labour and time as the preparation of a new map.

"During the year, eleven new maps and a second edition of the three sheets of the Yukon map were published and twenty-five maps are now being engraved or photo-lithographed. Amongst these are sheets 42 to 49 and 56 to 58, Nova Scotia, the colour-stones for which will be completed for printing as soon as certain questions connected with the geological classification are determined. A second edition of the Sydney coal-field maps is nearly ready for publication and will be issued early in 1899. Similar editions will shortly be required of the Rainy Lake, Moose River and Louisbourg sheets.

"The Glace Bay sheet has been engraved on copper and the West Kootenay and Three Rivers sheets are now being engraved. The capability of showing minuter details, its lightness and the fact that corrections and additions can be made by 'beating up' without injuring the other work, gives the copper-plate many advantages over the stone. It

Maps—Cont. is therefore desirable that all maps of the standard series should be engraved on copper, thus allowing the publication of subsequent editions, with corrections, with the quality of the work unimpaired.

“ The compilation of the altitudes of the Dominion has been continued and much information on the subject has now been collected, which, however, requires a great deal of collation and arranging before publication. Information has been supplied to members of the staff and others who have applied from time to time.

“ From March 14th to 25th was spent by me in Montreal, copying levels from the profiles in the Grand Trunk and Canadian Pacific Railway offices. It is to be regretted that the engineers of railways do not generally recognize the usefulness of such a compilation and, as has been done in the United States, furnish blue-prints of their condensed profiles. A general knowledge of the altitudes of a district through which a proposed line of railway is to run, would often save a company thousands of dollars and much time. Many of the railway profiles filed in the Department of Railways and Canals are inaccurate and deficient in information as regards the position of stations and other important points, which increases the difficulties encountered in reducing the levels to a common plane of reference and in correlating them with those of other railways.

“ From September 7th to October 7th was spent in the field. Transit and chain traverse-lines were carried, by way of the Canadian Pacific Railway, from Ottawa to Sharbot Lake, 90 miles, from Carleton Junction to Chalk River, 98 miles, and by way of the Kingston and Pembroke Railway, from Renfrew to Barryvale, 16 miles. These will form base-lines for the compilation of sheets 119 and 122 of the Ontario series and, with the work of previous years, give a traverse of Ontario from Ottawa to Georgian Bay with a connection, at Kingston, with the triangulation of the U. S. Coast and Geodetic Survey. Unfortunately, circumstances prevented the extension of the Chalk River line to Mattawa which has been determined in longitude by the Department of the Interior and Quebec Government. Similar traverses were also made of the M. & O., C. A., N. Y. & O., St. L. & O., and C. P. R. (North Shore) railways in the vicinity of Ottawa, to form a basis for a map on a scale of one mile to one inch, of the city and surrounding country within a radius of ten miles.

“ The following positions have been determined by the surveys of the past summer :—

	Long.	Lat.
Ottawa, flagstaff Parliament Buildings...	75° 42' 02."8	45° 26' 28"
Stittville station.....	75° 55' 20"	45° 15' 31"
Carleton junction.....	76° 08' 21"	45° 08' 09"

## Geological Survey Department

	Long.	Lat.	
Franktown station .....	76° 04' 56"	45° 01' 39"	Maps—Cont.
Perth " .....	76° 14' 54"	44° 54' 18"	
Maberly " .....	76° 31' 13"	44° 49' 57"	
Sharbot Lake " .....	76° 41' 39"	44° 46' 27"	
Arnprior " .....	76° 21' 39"	45° 26' 03"	
Sand Point " .....	76° 26' 09"	45° 29' 19"	
Renfrew " .....	76° 41' 04"	45° 28' 31"	
Pembroke " .....	77° 06' 41"	45° 49' 48"	
Chalk River " .....	77° 25' 58"	46° 00' 58"	
Calabogie " .....	76° 42' 12"	45° 18' 20"	

“Below are some magnetic declinations deduced from readings of a five-inch needle on the transit :—

Ottawa, Sept., 1898.....	11° 45'
Franktown, Sept., 1898.....	11° 25'
Elmsley " " .....	10° 46'
Perth " " .....	10° 00'
Arnprior " " .....	10° 40'
Calabogie " " .....	10° 10'
Cobden " " .....	10° 00'
Graham " " .....	9° 15'
Pembroke " " .....	9° 20'
Petewawa " " .....	9° 45'
L'Amable P. O., Sept., 1896 (mean of two).....	8° 20'
Ormsby " " .....	8° 40'
Gelert, Sept., 1895 .....	6° 50'
Kinmount, Sept., 1895 (mean of eight).....	8° 02'
Oakhill P. O. " " (mean of two).....	6° 37'
Horncastle P. O. " " .....	6° 13'
Dalrymple P. O. " " .....	6° 35'
Silver Creek station, Sept., 1895 (mean of two).....	5° 30'

“An enumeration of the maps published during the past year, or in course of preparation is appended herewith :—

### *Maps printed in 1898.*

	Area in square miles
275 Yukon District and Northern portion of British Columbia—Sheet I —Dease and Stikine Rivers (2nd edition)—Scale 8 miles to 1 inch.	36,540
276 Yukon District and Northern portion of British Columbia—Sheet II —Upper Liard, Frances and Pelly Rivers (2nd edition)—Scale 8 miles to 1 inch.....	36,540
277 Yukon District and Northern portion of British Columbia—Sheet III —Lower Pelly River and Lewes and Taiya Rivers (2nd edition)— Scale 8 miles to 1 inch.....	45,680
639 Ontario—Corundum Belt in Hastings and Renfrew Counties—Scale 5 miles to 1 inch.....	755
624 Nova Scotia—Sheet No. 50—Moose River Sheet—Scale 1 mile to 1 inch.....	216
654 Nova Scotia—Sheet No. 135—Glace Bay Sheet—Scale 1 mile to 1 inch.....	216

## Maps—Cont.

	Area square miles
641 Nova Scotia—Western Nova Scotia—Scale 8 miles to 1 inch.....	6,850
622 " —Killag Gold District—Scale 500 feet to 1 inch. ....	
642 " —Oldham Gold District—Scale 500 feet to 1 inch.....	
643 " —Caribou Gold District—Scale 500 feet to 1 inch. ....	
645 " —Goldenville Gold District—Scale 250 feet to 1 inch....	
646 " —Moose River Gold District—Scale 250 feet to 1 inch....	
647 " —Salmon River Gold District—Scale 250 feet to 1 inch...	
649 " —Forest Hill Gold District—Scale 500 feet to 1 inch....	
<i>Maps, engraving or in press.</i>	
Dominion of Canada, 2 sheets, each 28" x 34", including the Dominion from the Atlantic to the Pacific and from the International boundary to Hudson Strait and Great Bear Lake—Scale 50 miles to 1 inch. ....	
	3,500,000
604 British Columbia—Shuswap Sheet—Geology—Scale 4 miles to 1 inch.....	6,400
669 British Columbia—Shuswap Sheet—Economic Minerals and Glacial Striae—Scale 4 miles to 1 inch.....	6,400
663 British Columbia—West Kootenay Sheet—Scale 4 miles to 1 inch...	6,400
664 Manitoba and Keewatin—Lake Winnipeg Sheet—Scale 8 miles to 1 inch.....	45,680
605 Ontario—Sheet No. 126—Manitoulin Island Sheet—Scale 4 miles to 1 inch.....	3,456
630 Ontario—Sheet No. 129—Missisauga Sheet—Scale 4 miles to 1 inch..	3,456
626 Ontario—Map showing the occurrences of Iron Ores and other minerals in portions of the counties of Frontenac, Lanark, Leeds and Renfrew—Scale 2 miles to 1 inch.....	1,700
667 Ontario and Quebec—Sheet No. 121—Grenville Sheet—Scale 4 miles to 1 inch .....	3,456
665 Quebec—North-west Sheet "Eastern Townships" map—Three Rivers Sheet—Scale 4 miles to 1 inch .....	7,200
593 Nova Scotia—Sheet No. 42—Trafalgar Sheet—Scale 1 mile to 1 inch.	216
598 " —Sheet No. 43—Stellarton Sheet—Scale 1 mile to 1 inch.	216
600 " —Sheet No. 44—New Glasgow Sheet—Scale 1 mile to 1 inch. ....	216
608 Nova Scotia—Sheet No. 45—Toney River Sheet—Scale 1 mile to 1 inch.....	216
609 Nova Scotia—Sheet No. 46—Pictou Sheet—Scale 1 mile to 1 inch...	216
610 " " —Sheet No. 47—Westville Sheet—Scale 1 mile to 1 inch.	216
633 " " —Sheet No. 48—Eastville Sheet—Scale 1 mile to 1 inch.	216
634 " " —Sheet No. 49—Musquodoboit Sheet—Scale 1 mile to 1 inch.....	216
624 Nova Scotia—Sheet No. 50—Moose River Sheet—Scale 1 mile to 1 inch.....	216
635 Nova Scotia—Sheet No. 56—Shubenacadie Sheet—Scale 1 mile to 1 inch.....	216
636 Nova Scotia—Sheet No. 57—Truro Sheet—Scale 1 mile to 1 inch....	216
637 " " —Sheet No. 58—Earlton Sheet—Scale 1 mile to 1 inch.	21
652 " " —Sheet No. 133—Cape Dauphin Sheet—Scale 1 mile to 1 inch.....	216
653 Nova Scotia—Sheet No. 134—Sydney Sheet—Scale 1 mile to 1 inch.	216
648 " " —Mooseland Gold District—Scale 250 feet to 1 inch.....	



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	Area square miles	Maps— <i>Cont.</i>
650 Nova Scotia—Fifteen-mile Stream Gold District—Scale 500 feet to 1 inch .....		
456 Nova Scotia—Upper Seal Harbour Gold District—Scale 500 feet to 1 inch .....		
Nova Scotia—Sheet No. 53—Lawrencetown Sheet—Scale 1 mile to 1 inch.....		216
<i>Maps, compilation incomplete.</i>		
Western Ontario—Sheet No. 4—Manitou Sheet—Scale 4 miles to 1 inch .....	3,456	
Ontario—Lake Nipigon map—Scale 4 miles to 1 inch.....		
Quebec—Basin of Nottaway River—Scale 10 miles to 1 inch.....	56,800	
New Brunswick—Sheet 1 N. W.—Fredericton Sheet—Surface Geology—Scale 4 miles to 1 inch.....	3,456	
New Brunswick—Sheet 2 S. W.—Andover Sheet—Surface Geology—Scale 4 miles to 1 inch.....	3,456	
Mineral Occurrences in New Brunswick—Scale 10 inches to 1 inch....	33,000	
Nova Scotia—Sheets Nos. 59 to 65, 76, 82, 100 and 101—Scale 1 mile to 1 inch .....		2,376
Nova Scotia—Sheets Nos. 54, 55 and 66-69—Scale 1 mile to 1 inch....		1,296

## LIBRARY.

Dr. Thorburn, librarian, reports that during the year ended December 31st, 1898, there were distributed 7,852 copies of the Geological Survey publications, consisting of reports, special reports and maps. Of these 5,803 were distributed in Canada, the remainder, 2,049 were sent as exchanges to other countries.

There were received as exchanges 2,778.

The number of publications purchased was 161, and in addition there were 30 periodicals subscribed for.

The number of letters dealing with library matters sent out during the year, was 1,217, besides 694 acknowledgments.

The number of letters received was 1,542 and of acknowledgments 656.

The number of publications sold was 4,730, for which \$1,035.77 was received.

The number of volumes bound during the year was 207.

There are now in the library about 12,500 volumes, in addition to a large number of pamphlets.

NOTE.—The books in the library can be consulted during office hours by any one who wishes to obtain information on scientific subjects.

## VISITORS TO MUSEUM.

Visitors to Museum. The number of visitors to the Museum during the year 1898 has been 33,183, being an increase on that registered during any previous year.

## STAFF, APPROPRIATIONS, EXPENDITURE AND CORRESPONDENCE.

Staff. The strength of the staff at present employed is forty-eight.  
During the year the following changes have taken place :—  
Mr. W. F. Ferrier, resigned.

Mr. James M. Macoun, appointed assistant naturalist.

Appropriation and expenditure. The funds available for the work and the expenditure of the Department during the fiscal year ending the 30th June, 1898, were :—

	Grant.		Expenditure.	
	\$	cts.	\$	cts.
Civil list appropriation.....	50,600	00		
Geological Survey appropriation.....	50,000	00		
Boring appropriation.....	7,000	00		
Civil list salaries.....			49,904	12
Exploration and survey.....			18,815	57
Wages of temporary employees.....			11,473	93
Boring operations.....			7,000	00
Printing and lithography.....			12,939	46
Purchase of books and instruments.....			2,095	75
"    chemical apparatus.....			34	20
"    specimens.....			540	50
Stationery, mapping materials and Queen's Printer.....			1,076	21
Incidental and other expenses.....			1,404	21
Advances to explorers on account of 1898-99.....			17,288	15
			122,572	10
Deduct—Paid in 1896-97 on account of 1897-98 \$16,250.00				
Less—Transferred to casual revenue..... 582.02				
			15,667	98
			106,904	12
Unexpended balance civil list appropriation.....			695	88
	107,600	00	107,600	00

The correspondence of the Department shows a total of 9241 letters sent, and 8896 received.

I have the honour to be, sir,  
Your obedient servant,

GEORGE M. DAWSON,  
*Deputy Head and Director.*