SESSIONAL PAPERS.

VOLUME XVII.—PART I.

SECOND SESSION OF THE FIFTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1885.

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1885

LIST OF SESSIONAL PAPERS

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No. 21.. Return shewing the name of the Caretaker, Wood Ranger, or other officer of the Government (if any) in charge of the Crown Lands and timber at Rondeau Point: the salary or other remuneration (if any) paid such officer, and the amount collected by such officer (if any) for timber or ornamental trees sold, to the 31st December, 1883. (*Not printed.*)

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No. 42.. Return shewing all Provincial Railways (Ontario), which were by the legislation of the Parliament of Canada of 1883 declared to be Dominion Railways. The mileage of each said Railway. The amount paid to each by the Provincial Government and by the Municipalities respectively. (*Printed.*)

No. 43.. Return of copies of all correspondence, papers and documents relating to the estreated bail bonds of one Lyons, committed for trial by the Police Magistrate of St. Thomas, on a charge of burglary, or larceny, in the possession of the Honourable the Attorney-General, or in his Department. (*Not printed.*)

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No. 48.. Return furnishing the full text of the judgment of the Judges of the Queen's Bench Division of the High Court of Justice, on the Demurrer in the case of the Queen *vs.* Bunting and others. (*Printed.*)

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No. 52.. Return shewing in detail as to each Municipality:—(1) The amount of the original indebtedness of any Municipality to the Province under the Ontario Drainage Act. (2) The number and amounts of the rent charges originally payable in respect thereof. (3) The sum paid on account thereof. (4) The amounts in arrear for such rent charges. (5) The amount of rent charges yet to mature. And also a return of all correspondence and communications between any member or officer of the Government and any one on behalf of the said Municipalities as to the said arrears, or the reduction thereof, where any such reduction has been made, or of the claim of the Government in respect thereof, and also of all Orders in Council reducing or readjusting the indebtedness of any of the said Municipalities, and also shewing the amount of reduction in each case. (*Printed.*)

No. 53.. Return shewing the names of teachers on the superannuation list; the date of their superannuation; the amount received by each; their place of abode at the time of superannuation, and by whom their superannuation was recommended. (*Not printed.*)

No. 54.. Return of copies of all correspondence with reference to the application of Henry S. Mitchell to be appointed Notary Public. (*Not printed.*)

No. 55.. Return from each Registry Office, giving, for the final nine months of the year 1884, the following particulars :—(1) Number of absolute transfers and amount of fees received therefor. (2) The number of mortgages and the amount received therefor. (3) The number of discharges of mortgages and the fees received therefor. (4) The number of leases and the fees received therefor. (5) The number of wills and probates and the fees received therefor. (6) The number of patents and the fees received therefor. (7) The number of assignments of mortgage and the fees therefor. (8) The number of powers of attorney and the fees received therefor. (9) The number of bonds and agreements for sale of land and the fees received therefor. (10) The number of searches and abstracts and the fees received therefor. (11) The fees received for registering certificates, by-laws, plans and other instruments and services not enumerated and the fees received therefor. (12) Total amount received for registry fees. (13) The amount of surplus (if any) payable to the County. (*Printed.*)

No. 56.. Return of copies of Extracts, etc., from the Reports and Proceedings of the Special Committees appointed by the Imperial House of Commons in the years 1876 and 1877 to enquire whether it might be expedient to render employers liable for injuries occasioned to their servants, etc., and a copy of a letter addressed by Lord Justice Bramwell to Sir Henry Jackson, a member of said Committee, with respect to the matters inquired into by said Committees. (*Printed.*)

No. 57.. Report of the Inspector of the Elgin House of Industry and Refuge for the year ending 1st November, 1884, as required by section 460 of the Consolidated Municipal Act, 1883. (*Not printed.*)

No. 58.. Return of copies of all correspondence between the Government and the Council of University College respecting the admission of women to that institution, and shewing :—(1) The number of women attending classes in University College up to the date of the Return, distinguishing between matriculated and non-matriculated students, and between residents and non-residents of Toronto. (2) The number of women taking honour work in each Department in each year of the curriculum. (3) The amount spent by the Government and the College Council, as the result of the admission of women, with the objects for which it was spent. (4) The number of women undergraduates in each year of the Toronto University course; and (5) The number who have passed successfully in any of the groups of subjects at the local examinations for women, held under the auspices of the University, distinguishing between the first, second and third examinations. (*Printed.*)

No. 59.. Return shewing the number of licenses granted for the keeping of Private Lunatic Asylums for the years 1882, 1883, and 1884; the names of all persons obtaining such licenses, and the date of their issue. (*Not printed.*)

No. 60... Return of copies of all correspondence between William Coe and the Crown Lands Department, relating to lands sold to him in the year 1883; also, for a copy of the Report of the Commissioner of Crown Lands to the Lieutenant-Governor in Council on the sale made in such year 1883; also a copy of the Order in Council confirming such sale; also, as a supplementary return presented to the House during the present Session states the terms of said sale were cash, a statement of dates of payments made on account of said sale. The above Return to apply only to lands sold in the Townships of Wollaston, Limerick, Faraday and Tudor, in the County of Hastings. (*Printed.*)

No. 61.. Return of all papers, documents and correspondence to or from the Government or any member thereof, since the first day of March, 1884, to the present time, respecting the conduct of Samuel Stanley Peck, Esquire, Stipendiary Magistrate and Division Court Judge for the Provisional County of Haliburton, at the Municipal elections held on the fifth day of January last, in the Township of Minden, and subsequently thereto, and of any official or other information respecting the citizenship of the said Peck, and of any communication respecting the debt of the said S. S. Peck to the said Provisional County whilst treasurer thereof. (*Printed.*)

No. 62.. Abstract of Returns of Receipts, Expenditures, Assets and Liabilities, for the year 1884, of the Municipalities of the Province of Ontario, made by Clerks of Municipalities pursuant to 43 Vic., cap. 24, sec. 6, with the population of each Municipality. (*Printed.*)

No. 63.. Return of copies of all correspondence between the Department of Education and the Inspector of the County of Dufferin or the Trustees of School Section No. 1, East Luther, or any other person, relating to the Division of the said School Section. (*Not printed.*)

No. 64.. Return shewing the number of certificates of Railway Annuities and the amounts of the same which have been either sold or exchanged for any portion of the outstanding Railway Scrip, as authorized under the provisions of cap. 31, 47 Vic.; to whom sold or with whom exchanged; the terms upon which such sale or exchange was effected, and when sold; the date of the receipt of the money therefor. Also a copy of the advertisement asking for tenders, with copies of all tenders received in response thereto. (*Printed.*)

No. 65.. Return of copies of a certain memorandum or scheme with regard to a Federation of the other Universities and Colleges in Ontario with University College, and of all reports or resolutions of the governing bodies of the University of Toronto and other Universities or Colleges in relation thereto, and copies of any other documents affecting the proposed Federation. (*Printed.*)

No. 66.. The Bursar's Statement of Cash Transactions of the University of Toronto and University College, for the year ending 30th June, 1884. (*Printed.*)

No. 67.. Return giving a statement of all the real property belonging to the Endowment Fund of Toronto University, University College, and Upper Canada College, and the value thereof, and of all other property, namely: Debentures, Mortgages; Bank Stock; Balances that may be due on Sales of Land; Cash Balances in Banks; and any cash that may be in hand as on the 31st June, 1884; the income derived from the said property for the years 1883 and 1884, with the expenditure of the same for the same period; a clear statement shewing the kind of educational work that Upper Canada College is doing in excess or advance of what any well equipped High School is doing or can do. (*Printed.*)

No. 68.. Return shewing the amount spent in scholarships, bursaries, exhibitions and prizes in Toronto University, University College and Upper Canada College during the ten years ending 1883-4, distinguishing between those on public and those on private foundations, and in the case of the University between those granted in the different faculties of Arts, Law and Medicine. Also, amount paid annually, *per* student, by fees in each of the above classes. (*Printed.*)

No. 69.. Return shewing the names of all companies or associations incorporated under chapter 167 of the Revised Statutes, since the year 1877, with the dates and places of incorporation, and particularly the objects of incorporation thereof respectively. The names and like particulars as to companies or associations incorporated since the year 1877 under chapter 158 of the Revised Statutes, being the Act respecting co-operative associations. (*Printed.*)

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No. 72.. Return shewing the lots in the Township of Harvey, in the County of Peterborough, which, while under license for the cutting of timber, have been sold since the first day of January, 1880, with a statement of the date when the right to cut timber under such license would cease in consequence of such sale. Also, the name or names of the license holders whose license covered such lands. (*Not printed.*)

No. 73.. Report of the Dairymen's Association of Western Ontario for the year 1884. (*Printed.*)

No. 74.. Return of copies of all applications made to the Provincial Government for aid to Railways since the passage of the Dominion Act of 1883, declaring Provincial Railways to be for the benefit of Canada, with copies of all correspondence relating to such applications. (*Not printed.*)

No. 75.. Return of all correspondence between the Crown Lands Department, or any officer thereof, and any other person, with reference to the dues charged by timber limit holders to actual settlers upon lots on which they have not been formally located. (*Not printed.*)

No. 76.. Return to an Address, of the fourteenth day of March, 1884, for copies of all Orders in Council passed under the authority of the General Mining Act, creating, extending, adding to, or diminishing mining divisions. (*Printed.*)

No. 77.. Report of the Secretary and Registrar of the Province for the year 1884. (*Printed.*)

No. 78.. Return of all market fees and market rents, salaries of market clerks, with rates of fees now charged and any changes of fees known to the Department since the passing of the Act relating to Market Fees, being 45 Vic., cap. 24. (*Not printed.*)

No. 79.. Return of all correspondence between the Crown Lands Department, or any officer thereof, and any other person, with reference to the opening up for settlement of the Townships of Himsworth and North Nipissing, or any part of them, and also, of all petitions, reports or Orders in Council on the subject; also, for copies of all petitions or applications to the Crown Lands Department for a supply of timber for the purposes of a local mill there, and of all correspondence between the Department and any other person on the subject. (*Not printed.*)

No. 80.. Statement of the Assets, Liabilities, Revenue, Expenditure, etc., of the several Municipalities in the Province. as made by the Clerks of the Municipalities for the year 1883. (*Not printed.*)

No. 81.. Return of copies of all reports made to the Government by Directors of Joint Stock Road Companies for the year 1884, under sec. 146, cap. 152, of the Revised Statutes, as amended by ss. 6 and 7, cap. 25, 47 Vic., and a Return shewing the date of construction of all toll roads in the Province, the number of toll-gates maintained thereon, the rate *per* mile charged as tolls, and specifying the amount of the original capital stock, and the amount of the present stock, with the reasons for an increase, if any, in each case ; also a Return shewing the toll roads which have been abolished in the Province, or on which the collection of tolls has ceased, and the manner and terms of their abolition, or the reasons why tolls have ceased to be collected. (*Not printed.*)

No. 82.. Statement in detail of the Receipts and Expenditures on account of the Mercer Estate for the year 1884. (*Printed.*)

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No. 84.. Report of the Bureau of Industries for the Province for the year 1884. (*Printed.*)

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No. 86.. Return shewing what sums have been paid to George R. Patullo on any account whatever since first January, 1883, with the dates of the payment thereof and the purpose for which such payments were made. (*Printed.*)

No. 87.. Return of copies of all correspondence and other documents relating to the cancellation of location of lot number 33 in the first concession of Snowden, in the Provisional District of Haliburton, and of all correspondence and documents relating to the sale or re-location of the same lot. (*Not printed.*)

No. 88.. Return of all correspondence between the Municipal Council of the Township of Roxborough, or any member or officer thereof, and the Provincial Secretary, or any officer of his Department, with reference to the claim made by the License Board of Stormont upon the said Municipality for payment of fifty dollars towards the expenses of enforcing the Temperance Act of 1864 in the Township of Roxborough. Also, shewing the amount demanded from each Municipality in which the said Act was in force for each of the years 1882, 1883 and 1884, and the amount paid in respect of such demand. Also, shewing how the said sum of fifty dollars demanded from the said Township of Roxborough is made up. (*Not printed.*)

No. 89.. Report of the Inspector of Legal Offices, for the year 1884. (*Printed.*)

No. 90.. Report of the Entomological Society of Ontario for the year 1884. (*Printed.*)

No. 91.. Return shewing the several Lots in the Townships of Belmont, Methuen, Anstruther, Galway and Cavendish, in the County of Peterborough, and of the Townships of Cardiff, Monmouth, Snowden, Lutterworth and Glanmorgan, in the Provisional County of Haliburton, which have been sold, located, disposed of, or applied for, otherwise than under the "Free Grant and Homestead Act," since the first day of January, 1880; also, the dates of the said sales, the persons to whom sold, the prices paid, and terms of payment; also, the dates of the several applications for the purchase, location, and terms of location of said lots. (*Not printed.*)

No. 92.. Return of the names of all persons appointed or employed for the collection of Statistics other than Vital Statistics in connection with any Department of the Provincial Government; the places of residence of such persons, the salary or other remuneration paid or given to them; the dates during which they were employed; the instructions, if any, given to such persons, and a statement shewing the cost of compiling such statistics, such Return to embrace the years 1883 and 1884. (*Not printed.*)

REPORT

OF

E. B. BORRON, STIPENDIARY MAGISTRATE,

ON THAT PART OF

THE BASIN OF HUDSON'S BAY

BELONGING TO THE PROVINCE OF ONTARIO.

Toronto:
PRINTED BY THE "GRIP" PRINTING AND PUBLISHING COMPANY.
1884.

COLLINGWOOD, 26th February, 1884.

The Honourable O. MOWAT,
Attorney-General,
Toronto.

SIR,—I have the honour to transmit herewith my report for last year.

In it, a detailed account is given of my exploration is in the Provincial Territory, on and beyond the Height of Land.

Some subjects which appeared specially to demand it, have been discussed under separate and appropriate heads.

I have once more to acknowledge the obligations I am under to all the officers at the Honourable Hudson's Bay Company's Posts visited by me this season, for assistance willingly afforded, and numerous acts of kindness conferred on myself and companions.

I have the honour to be,

Sir,

Your most obedient servant,

E. B. BORRON,
Stipendiary Magistrate.

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REPORT

OF

E. B. Borron, Esq., Stipendiary Magistrate,

ON THAT PART OF THE

BASIN OF HUDSON'S BAY

BELONGING TO THE PROVINCE OF ONTARIO.

That part of the Territory north of the Height of Land to which my attention has been more particularly directed this season, is situated between the Missinaibi branch of Moose river and Albany river. Previous journeys, to and from Moose Factory, had taken me over nearly every known canoe route by which it is possible, to pass from Lake Huron to James' Bay. These routes, however, have traversed almost exclusively that portion of the so-called "Disputed Territory" lying to the eastward of the Missinaibi river. The following brief description of the routes already travelled will make this plain. In 1879, on the occasion of my first trip to Moose Factory, I ascended French river to Lake Nipissing, crossed the Height of Land which divides the waters flowing into the Ottawa from those flowing into the Georgian Bay, and followed the Mattawan river from its source to its junction with the Ottawa river. This river was now pursued on its northerly or upward course until the upper end of Lake Temiscamingue was reached. Here the country rises suddenly, and on again entering the river, no fewer than fifteen portages were necessary, in less than as many miles. These are known to voyageurs as "the Quinzes." Entering Lac-Les-Quinzes, the route which had been easterly in the last stretch, again resumed its northerly course. While the main Ottawa river flows into the eastern arm of this lake, our route took us up the northerly arm, and thence through a chain of lakes connected by two or three short portages for fifty miles, when the Height of Land was reached. Crossing this, we struck a chain of lakes in which the Abittibi river takes its rise. Passing through these lakes, and Lake Abittibi itself, we descended the Abittibi river to its junction with Moose river, and followed that river to our destination, Moose Factory. I returned late in the fall of the same year to Lake Superior, by what is known as "the Michipicoten route." Starting from Moose Factory, we ascended the main Moose river to the junction of the Mattagami (sometimes called the South Branch) and the Nissinaibi (sometimes called the Brunswick or North Branch). The route then takes up the Missinaibi, or Westerly Branch, and this was followed to its source, Lake Missinaibi, on the Height of Land. From this a short portage took us to Crooked Lake, and another, also short, to Dog Lake. In this last lake, the Michipicoten River has its source, and this was followed down to Lake Superior.

In 1880, I proceeded to Moose Factory by the Michipicoten route, explored the territory in various directions from Moose Factory as a centre, and returned by the

Abittibi and Ottawa route. Several considerable deviations, however, from the route usually followed, took place. For instance, when on my return, we had reached Lake Temiscamingue, instead of going on to Mattawan and ascending that river to Lake Nipissing, we turned up a branch of the Montreal river and passed through a chain of small lakes which led us to Lake Temagaming, from whence we descended the Temagaming and Sturgeon rivers to Lake Nipissing, and thence down French river to the Georgian Bay,

In 1881 I again commenced my trip at Michipicoten, but only followed that route a few miles north of Lake Missinaibi, when we struck eastward to Flying Post on the Ahkuckootish or Ground-hog river; and from thence to Matawagamingue Post still further to the eastward. The Mattagami or South Branch of Moose river issues from this lake, and down it we took our way for some 285 miles to Moose Factory. Returning, I followed the coast of James' Bay to Albany Factory, ascended the Albany river four hundred and twenty or thirty miles to Osnaburgh Post on Lake St. Joseph. From this lake which is nearly on the Height of Land that divides the waters flowing into James' Bay from those flowing not only into Lake Winnipeg, but also into Lake Superior, it was my intention to have pursued a rarely travelled rout to Lake Nipigon and thence followed the Nipigon river to Lake Superior. I was, however, unable to obtain any guide at Osnaburgh who knew this route, and therefore compelled to go from thence to Lac Seul or Lonely Lake. From this we struck south and intersected the C. P. R, near Wabigoon Lake, and took a construction train from thence to Prince Arthur's Landing.

Last year (1882) I commenced my journey at the mouth of the Mississauga River which I ascended to the Height of Land. Crossing this I struck the "head waters" of the Ahkuckootish or Ground-hog river. This was followed down to Flying Post and from thence to its junction with the Mattagami. Thereafter the route to Moose Factory was the same as that of the preceding year. Returning, I ascended the Moose and Mattagami rivers to the source of this last on the Height of Land. Crossing "the divide," I struck the head waters of the Spanish river which were followed until we approached within a few miles of the Hudson's Bay Company's Post on Whitefish Lake, to which we crossed over. Thence we pursued the usually travelled route down Whitefish river to the Georgian Bay.

These routes will be found roughly delineated on the sketch map which accompanied the Report of last year.

Thus it will be perceived that while I have had opportunities of obtaining at least a good general idea of the character and resources of the eastern division or half of this territory—my personal knowledge of that part lying to the westward of the Missinaibi has hitherto been confined to what I could gather from other sources. It is true that I had travelled round three sides of it, on my voyage from Michipicoten to Moose Factory—from Moose Factory to Albany Factory, and from this last Post to Osnaburgh. But before this year I had not penetrated into this region more than a few miles, with the exception of one point, some ten or twelve miles above Moose Factory, where a tributary river was ascended for nearly a hundred miles. When we consider, however, that the area of the territory referred to is not less than thirty thousand square miles, it must be obvious to all how little could be thus ascertained in reference to it. Nor, by those who know the difficulty of getting through the country, will too much be expected from the explorations of one short season.

With the information I had before me, I concluded that this year the route which might be expected to yield results most interesting and important to the Governmennt and Province of Ontario, would be as follows:—To ascend Nipigon river to Lake Nipigon; thence strike eastward to Long Lake; from Long Lake to descend the English or Kenogami river to its junction with the Albany, and then down that river to Albany Factory. From Albany Factory, the coast of James' Bay might be followed to Moose Factory.

On my return I proposed to ascend the Missinaibi Branch of Moose river to New Brunswick, and if practicable, to cross the country from thence to Long Lake. From Long Lake reach Lake Superior by the Hudson Bay Company's route to Pic; and thence along the shore of Lake Superior to Michipicoten.

On the 30th of May, in pursuance of this plan (subject to such modifications as circumstances might render necessarry), I started from Sault Ste. Marie on the steamer, Frances Smith for Red Rock, Nipigon Bay.

The boat was advertised to call at the various ports on the north shore of Lake Superior, and it was natural to suppose it would do so on the way up. I was, however, disappointed to learn on going aboard that it was the Captain's intention to proceed straight to Prince Arthur's Landing, and call at Red Rock only on his return. It had been arranged with the forwarders to divide our provisions into three parts—one to be taken with us, and the other two portions to be left at Michipicoten and Pic. These last were to be sent inland to meet us at Long Lake and New Brunswick, as it would be impossible to take with us over the route we proposed following, anything like the quantity of provisions we would need—and I could not rely on getting any from the Hon. Hudson's Bay Company at inland posts, such as Long Lake and English river. As will afterwards appear, this failure of the steamer to call at Michipicoten or Pic, either on its up or down trips, occasioned us a great deal of delay, trouble and expense.

It was the 3rd of June when we arrived at Red Rock. Owing to the vigour with which work in this neighbourhood was being prosecuted by the contractors engaged in the construction of the Canadian Pacific Railway, it would have been all but impossible to have procured either men or canoes, had I not anticipated this difficulty, and made such provision to meet it as rendered me in some measure independent.

With all the assistance that Mr. Flannigan, the officer in charge of the H. B. Co'y Post at Red Rock, could give me, however, I was unable to get a guide to Lake Nipigon, and finally, having waited three or four days, started without one. I still hoped, however, we might succeed in obtaining a guide at the Catholic Mission on Lake Helen, or possibly meet some Indian on the river. My party consisted of Messrs. H. C. Hamilton and A. H. Scott, of Toronto, Robert Nolan, of Sault Ste. Marie, who was with me last year, and John Sampson Legarde, of Michipicoten river.

Persuaded that information obtained in the course of an exploration of this nature can be best presented in the form of a narrative, I shall again adopt that method in this Report, supplementing it with such observations on particular points and subjects, as may appear to be specially called for.

FROM RED ROCK, LAKE SUPERIOR, TO NIPIGON HOUSE (LAKE NIPIGON.)

June 7th.—Having failed in a last attempt yesterday to obtain a guide at the Catholic Mission on Lake Helen, and put our canoe, which had proved very leaky, in better order, we left early this morning and crossed over to the mouth of the Nipigon river, some four miles distant from the settlement, and about the same from Red Rock. Lake Helen appears to be seven or eight miles in length, and from half a mile to two miles in breadth. It is only a very few feet (I should say not more that four or five feet) higher than Lake Superior. This occasions a rapid at its outlet, just a little above the Hudson's Bay Company's Post at Red Rock, to which the Lake Superior steamers can ascend. There is a limited area of arable land at the Indian Settlement and Mission, on which potatoes would seem to be the principal if not the only crop grown. I noticed quite a heavy bank of clay there—probably a drift or boulder clay, and containing a good deal of lime. The timber is for the most part small and poor, necessarily so on the barren, rocky ridges, but arising, where there is any soil, from the fact that fires have passed over the greater part of this country too recently to admit of the growth of heavy timber.

We had not advanced far up the river when we came to an Indian camp ; and here we succeeded, much to our satisfaction, in hiring two Indians, who were willing to be our guides as far as "Nipigon House," the Hudson Bay Company's fur trading post on Lake Nipigon.

As we ascend the river in a north-westerly direction the banks, at first low, become higher ; the breadth decreases and the current is stronger. Although rocky ridges are generally not far distant on one side or the other, limited areas of land well suited to the growth of potatoes and hay, and capable of affording excellent pasture for cattle, are not unfrequently met with. Some five or six miles from Lake Helen a tributary joins from the west, the water of which is precipitated from a height of about twenty feet into Nipigon river. A little above this we come to a rapid, at the foot of which, on the west side, is the second Portage (from Red Rock). On the opposite, or east side, is "Camp Alexander," well known to all the anglers who resort to Nipigon river to enjoy the speckled trout fishing, for which it is famous. Mr. Alexander, after whom the spot is called, was an enthusiastic fisherman, from St. Louis, in the State of Missouri, who was wont to fish here upwards of twenty years ago, and with whom this was a favourite camping ground. In former times an angler, even if not very expert, could catch great numbers of trout, many of which would weigh from two to six pounds. Very large fish are, I believe, not so plentiful now as they once were, and as the number of anglers increase they may be expected to become less common. Nipigon, however, will always take a high rank among the trout-fishing rivers of this country, if not ruined by sawdust and nets.

Following the portage at which we had arrived, for about a third of a mile, we came to a brook, which was ascended for a short distance and brought us to the third Portage. This is nearly two miles in length, and we only got part of our baggage and supplies over before it was time to camp. The fall in the rapids which renders this and the preceding portage necessary is not less, I think, than one hundred and twenty-five feet. The rock, where exposed, seems to be for the most part trap and felspathic gneiss.

The timber near the river has been destroyed by fire. So complete, in some cases, has this destruction been that a good range for cattle could be had at little or no cost of clearing. This was particularly noticeable at the south end of this last portage. Vegetation is very backward, this having been, I believe, an exceptionally cold spring. Wild strawberry plants are only just now coming into blossom. The cherry is putting forth leaves; but the willow shows nothing as yet but catkins. The smaller aspen and white birch are budding out; but there is hardly a vestige of anything in the way of foliage on the larger trees, of which a few here and there have escaped the last fire. All the clays which I met with to-day were calcareous or, properly speaking, marls.

June 8th.—It was eleven o'clock before everything had been got over the portage, and we were again ready to embark on a lake-like expansion of the river. The weather was exceedingly stormy and wet, and it was with some difficulty that the upper end of this lake, which turned out about three miles in length, was reached. Here we landed for dinner, and the rain and wind continuing unabated, we ultimately camped for the night.

The country on both sides this stretch has been burnt over, and appears to be rocky and barren.

June 9th.—On starting this morning we had first a half mile of river, the current in which is at this point pretty strong. We then entered a lake some three (3) miles in length, which, with another mile of river, brought us to the next portage. In the last stretch the river contracts to two chains in width, and passes through a gorge in trap rock, which is quite precipitous, particularly on the east side. This, the fourth portage, is not more than 150 yards in length, and the fall in the rapid is, I should say, about eight feet.

In a mile and a half further we come to the fifth portage. This is over a small island, and only fifty or sixty yards in length. The fall in the rapid at this point I estimate at five or six feet.

This last stretch is also through trap rock, the walls or cliffs on both sides of the river being quite precipitous, and in some places apparently not less than 200 feet in height.

Half a mile further, we came to the sixth portage, on the west side of the river. This proved to be about a mile and a half in length, and the fall in the rapids, by Dr. Bell's measurement, is forty-five feet. The frequency and length of the portages rendered our progress very slow, and we were obliged to camp at the upper end of this portage. Our course to-day has been generally north, or a little to the east of north; and the distance of this from our last camp is not more than eight miles.

On this stretch no good land or timber was met with, the country, as seen from the river, appearing exceptionally rocky or broken. A few white pine were noticed between the fourth and fifth portages, but they were few in number and small in size, the largest seemingly not more than three or four feet in circumference. Birch and aspen are the most common trees; and these, for the most part, a second growth, succeeding recent bush fires, which have destroyed the original forest.

The rock is principally trap, of which there would seem to be a good deal in this part of the country. I met with a few veins, but could see nothing in them but quartz carrying a little iron pyrites.

June 10th.—This being Sunday, we did not travel. In the course of the afternoon a party of Indians belonging to the settlement on Lake Helen passed down. They were returning from the Hudson Bay Company's Post, on Lake Nipigon, where they had been for seed-potatoes, of which they had a number of bags with them. Each man took a couple of bags on his back, and trotted off over the portage. It was their intention to plant these immediately on their return home. Reckoning the time and labour of the party at the wages current at Red Rock, these potatoes will cost them probably $3.00 or $4.00 a bushel; whereas, with a little foresight and prudence, they might have saved enough of seed from the crop of last year, or even got them from Collingwood or Owen Sound, by steamer, for $1 or $1.25 a bushel. The Indians are fond of potatoes, and are easily taught to grow them; and when once a family has experienced the great value of this crop, they rarely abandon its cultivation, if they can obtain seed. They are so thoughtless and improvident, however, that if a little pinched for food during the winter, they will eat or sell their last potato, and have nothing left for seed in the spring.

I sent back, with this party, one of the Indians from Lake Helen, the other having agreed to go with me as far as Long Lake.

June 11th.—Rather a sharp frost during the night; for although the thermometer did not register a lower temperature than 33° Fah., our tents and tarpaulins were covered with hoar-frost at four o'clock this morning.

Starting from here, one and a third miles on a course some eight or ten degrees east of north brought us to the next or seventh portage, called "Smooth Rock." This portage does not (as usual) commence at the foot of the rapid, which renders it necessary, but nearly a third of a mile north-west of it. It is only about 250 yards long. The fall in the rapid is not, I think, more than twelve feet.

A mile and a half from the upper end of this portage, on a northerly course, brought us to a point where the main Nipigon river is left on the right, and we ascend a small and insignificant stream, with barely sufficient water to float our canoe. Picking our way among the boulders up this stream for half a mile, on a course N. 15° W., we entered a lake called "Big Sturgeon Lake." This lake has several deep bays or arms, and is probably much larger than it appears. Three miles on a course bearing north, sixty degrees west, brought us to the eighth and last portage. It pursues a north-westerly course for three-quarters of a mile, and terminates at what is known as the South Bay of Lake Nipigon, some distance to the westward of where the river leaves it. The fall in the rapids, which I did not see, will not exceed, I think, what Dr. Bell makes it, nearly eighty-one feet. This portage is called Flat Rock Portage by the Indians, and the name is very appropriate. It is singularly bare, flat and smooth throughout the entire length nearly of the portage. In some places it is curiously jointed and veined. I fancy that it has formed the upper surface of a trappean overflow, the rock being in some places very fine grained and dark, and in others resembling the ordinary grey trap. The country passed through on this stretch appears to be rocky, barren and unsuitable for settlement. The timber consists of poor spruce, tamarack, birch and aspen.

Roughly estimated, I should say that the distance from Red Rock to Lake Nipigon does not exceed thirty miles, and that the difference of level between this lake and Lake Nipigon is not more than 300 feet. With only one small pocket Aneroid barometer, however, it is impossible to take the rise or fall with any pretensions to accuracy.

The following are the portages on Nipigon river, with the falls in the rapids, as determined by Dr. Bell. (See Report of Progress of the Geological Survey, 1866 to 1869, p. 338):—

	Feet.
Current between Red Rock and Lake Helen	2
Current in river from Lake Helen to Camp Alexander, six miles	6
Chute at Camp Alexander	4
From the last to foot of Long Portage, by way of Portage Brook	8
Rapids at Long Portage	137
Currents in the narrows between Lakes Jessie and Maria	½
Current from lake to Cedar Portage	1
Cedar Chute	10
Current from Cedar Chute to Island Chute	1
Island Chute	7
Current from the Island to One Mile Portage	2
Rapids at One Mile Portage	45
Current from One Mile Portage to White Chute	1
White Chute	6
Current in brook between Lakes Emma and Hannah (or Big Sturgeon Lake)	1
Rise from the last lake to Lake Nipigon (Flat Rock Portage)	81½
Lake Nipigon, above Lake Superior	313

On the Canadian Pacific Railway Map, in my possession, the height of Lake Nipigon above the datum line or level of the sea is 850 feet, which is somewhat less than Dr. Bell's estimate.

We now embarked on Lake Nipigon and crossed the first deep bay; but the wind rising, with threatened rain, we landed and camped on the shore of a small bay, about three and a half miles from the portage. Here I noticed a black sand which, at first sight, I supposed to be hornblende, but found on close examination to be magnetic iron ore.

June 12.—It was still raining when we got up this morning, and we did not start until ten o'clock. After paddling some seven miles we were again compelled to go ashore, having come to a point where it was necessary to make a succession of long traverses, exposed to the full sweep of the wind. These traverses, as they are called by voyageurs, are generally made from point to point across the mouths of deep bays to avoid the loss of time and greatly increased distance entailed by following the shore and going round them; or a traverse may be made across a lake, or the estuary of some large river. Such traverses, if long, cannot be safely undertaken in a heavily laden canoe in stormy or unsettled weather.

June 13.—This morning was clear and cool, and we made an early start. Half an hour's paddling brought us to the entrance of Chief's Bay. This is a large bay, apparently not less than ten miles in depth. The traverse, where we made it, is about four miles on a north-westerly course; there appeared to be a point, however, further in the bay, where the straits or channel was not more than two miles in width. Having made the traverse, we came, in about two miles, to a well sheltered little bay where we landed for breakfast, and while it was preparing I ascended one of the highest hills in the neighbourhood. It was 400 feet above the level of the lake and composed of gray trap. Fire had passed over it apparently not more than three or four years ago, and the timber had been all killed or burnt entirely off. The rock (partly, no doubt, in consequence of the heat to which it had been exposed) is in many places much decomposed, crumbling into pellet-like and ball-shaped pieces of a dirty brown colour, reminding me of rocks presenting the same appearance at Mamainse on Lake Superior. I saw, however, no veins or minerals of economic value, the soil, where any, seemed good, being a warm, friable, brownish loam. After breakfast we made another traverse, which took us nearly three hours, and the distance here from land to land must be at least nine or ten miles. The bearing was about N.N.W. From this to the Hudson's Bay Company's Post our course was a little more westerly, and the distance about seven miles. This makes the distance from Flat Rock Portage to the Post, about thirty-five miles. This estimate is based on the assumption that when paddling we made about three miles an hour. I may remark, however, that Mr. DeLaronde, the officer in charge of "Nipigon House," makes the distances from the Post to Flat Rock, and from thence to Red Rock, considerably more than I have estimated them at.

At this Post I expected to be able to obtain reliable information in regard to the route to Long Lake, and to secure the services of a competent guide. I hoped too, to have been able to exchange my canoe for another, or others more suitable for the route I proposed following. I was sorry to find that the route to Long Lake, although practicable for small canoes, would, at least, present great difficulties to our passage over it in a large four fathom canoe, and that the trip would, at best, be slow and laborious. Mr. DeLaronde informed me that there were no canoes such as I wanted at the Post, and that it was even doubtful if another man could be got.

June 14th.—The Hudson's Bay Company's establishment here is not as large as I expected to see. The site is rather pretty, and very well sheltered by an island, so much so that, on approaching it from the open lake, it cannot be seen by the voyager until he is close to it. A catholic mission has been established a mile or so to the eastward of the Post, which is conspicuous at a distance of four miles.

I was not very favourably impressed with either the climate or the soil. In fact, with the exception of a few hours, it rained almost the whole time we remained at the Post. The soil fit for cultivation, so far as it fell under my observation, is only found in patches here and there, between exposures of rock. It is a sandy loam, and moderately fertile. Mr. DeLaronde informs me that Indian corn, barley, peas, kidney beans, carrots, turnips, onions and cabbage can be grown. I should not have expected Indian corn to grow, or at all events attain maturity. I have no doubt, however, that wheat will grow and ripen perfectly, wherever a suitable soil can be obtained. Mr. DeLaronde says that the ice disappears from the lake about the latter end of May. He tells me that there are some red pine, but no white pine, so far as he has seen, on Lake Nipigon. The principal timber consists of tamarac, cedar, spruce, poplar, birch and aspen. There is good meadow land, he informs me, at the mouth of Gull river, and that clay can be found in many places on digging for it. Limestone (probably crystalline), is said to have been found in two or three places. Lake Nipigon has not as yet yielded to the explorer, much in the way of valuable minerals, but may do so in the future.

All the different kinds of fish found in Lake Superior are equally good and plentiful, I believe, in Lake Nipigon. Mr. DeLaronde enumerates the following species, viz.:—whitefish, lake trout, speckled trout, silver fish, which attains a weight of 6 lbs., and is, I presume, a variety of whitefish like the tuliba of James' Bay. Then there are sturgeon, pike, suckers, dore or pickerel, perch, chub, and a small fish three or four inches in length resembling the sardine, but this is most likely, I think, the young or fry of some of the larger species. There is no doubt, in view of the size of Lake Nipigon, that when markets, become accessible by rail, fisheries will be established and become an important industry. Dr. Bell makes the length of Lake Nipigon 70 miles, and its breadth about 50 miles, with a coast line of nearly 600 miles.

June 15th.—To-day we had one of the severest thunder storms I ever remember to have experienced in this country. It lasted five or six hours, the rain descending in such torrents that our camping ground was flooded, and we were literally "drowned out" of our tents. But for the kindness of Mr. DeLaronde, who provided us with shelter and dry blankets we should have been obliged to pass a very uncomfortable night.

June 16th.—A fine morning at last, but most of our things being wet, I concluded to delay our departure until the afternoon, in order that they could be at least partially dried.

Mr. DeLaronde had engaged a man to accompany me to Long Lake. Unable to obtain half-sized canoes, two of which would have answered me better, there was nothing for it but to make the trip in our large canoe, which, if once at Long Lake, would thereafter be more suitable in some respects than smaller ones. In order to lighten our load and lessen the labour of portaging, which I was led to expect would be severe, I parted with almost all superfluous articles of luxury that Mr. DeLaronde was willing to take off my hands.

FROM LAKE NIPIGON TO LONG LAKE.

At 2 p.m. we got under way, and pursuing an east south-east course for about 12 miles, camped on an island near a point, at which my guides said a long traverse would be necessary. We had barely got our tents pitched when rain, accompanied with thunder, lightning and wind again came on—but very moderate as compared with yesterday. Even this storm, however, would have been far from pleasant if it had overtaken us when making any of the traverses referred to.

June 17th.—This being Sunday we remained encamped.

June 18th.—Started at 6 a.m. and took a south-easterly course across the lake for the mouth of the Mamaominikon or Sturgeon river. This we reached about four o'clock in the afternoon. The distance is about 20 miles—and made up of long traverses, from island to island. In crossing to the north and east of Gros-Cap, we were able to form some faint idea of the size of this lake. Fogs are seemingly frequent, and "the mirage" is also seen elevating and distorting objects at a distance. The temperature of the air during the day varied from 49° to 59°, and of the water from 40° to 49°. Ice was seen on the islands in one or two places—an evidence of the coldness and backwardness of the season. The islands we passed were mostly composed of trap-rock; and though less elevated, reminded me of those seen in the neighbourhood of Thunder Bay, on Lake Superior. Vegetation was very backward; and the timber, where exposed to the sweep of the wind, was stunted and poor. Although I have been disappointed with that portion of the country bordering on Lake Nipigon, now for the first time seen, I have no doubt, however, that on the west side, and up the rivers which empty into the lake, more or less land fit for cultivation will be found.

The Sturgeon river is about two chains in width, with a moderately strong current. The water is much darker than that of the lake itself. Near the mouth, sandstone, slate and conglomerate rocks were met with "in place."

We ascended the river about three miles, and camped a little below the first rapid and portage.

The soil on the banks is a sandy loam reposing on clay, and from the appearance of the timber, I should take it to be a tolerably good soil. The timber consists of aspen spruce, tamarac and birch, with some rough bark or banksian pine.

June 19th.—It commenced raining yesterday afternoon, and has continued to do so with little or no intermission all night. It had not abated this morning, and knowing the state the portages would be in, and how drenched everything would get, I waited until mid-day to see if it would not clear up. Disappointed in this, and impatient at the delay, we started at 2 p.m. The first portage, which was close at hand, turned out to be quite short, not more than 100 yards in length. The fall here is about ten feet. In two miles more we came to the second portage, about two hundred yards in length, with an estimated fall in the rapids of fifty feet. Both these portages are on the south side. In another two or three miles we arrived at the third portage, where we camped for the night.

June 20th.—The temperature of the air fell to 32° or freezing point last night. This (3rd) portage is a mile and a quarter in length, and the fall in the rapids probably not less than forty feet. But little rock is visible on the portage, but that seen was trap. Owing to the length of the portage, and difficulty experienced in getting the canoe across, it was two o'clock in the afternoon before we were ready to start again. In three or four miles more we came to the fourth portage, 200 yards long with a fall of about ten feet in the rapid. A short distance above this, a demi-charge was necessary, and at the end of another mile, or say about two miles from the fourth portage, we arrived at the fifth portage, and there camped. The timber met with on this stretch was mostly spruce, banksian pine, tamarac and cedar. On the low, flat river bottom, between the third and fifth portages, there is a considerable quantity of tamarac and cedar. At the upper end of the third portage I measured aspen, poplar and balsam trees that were 42 inches in circumference, spruce 70 inches, and white birch 40 inches. The rock at fourth portage and demi-charge consists of greenish grey slates with veins of quartz. At the west end of the fifth portage we found a tree blazed, and marked "C. P. R., September 17th, 1881."

In ascending the river our course thus far has been, on the whole, pretty steadily eastward. The average width of the river has been about two chains.

Black flies were out in force to-day. It is the first time they have been troublesome this season.

June 21st.—The fifth portage, at the lower end of which we camped last night, turned out to be fully a mile long, and much time was consumed in getting our things and the canoe over it. The fall here is estimated at 35 feet. Embarking once more, we met with no serious obstruction for about ten miles. Then we came to a long and very stony rapid, up which our progress was very difficult and slow. At the upper end of this a short portage (the sixth from the mouth of the river), was necessary. Again we started, and in two miles further arrived at another, the seventh portage, and camped. The fall in the stretch of river ascended to-day, inclusive of that at the fifth portage is estimated at fifty feet.

The soil is a sandy loam and in some places good meadows might be obtained on the banks of the river. The timber where unburnt consists of white birch, banksian pine, tamarac, balsam, spruce and aspen. For some distance above the fifth portage the land is low and flat on both sides of the river and bears cedar and tamarac of a size large enough for railway ties. The rock is mostly a grey schistose rock or slate.

June 22nd.—About a mile above our camp on the seventh portage, we came to a short rapid which compelled us to make another, the eighth portage. This was only a few yards in length over a rock. We then encountered a strong current, to ascend which it was necessary to have recourse to our poles. Half a mile of this brought us to a fall of about six feet, where the ninth portage, some fifty yards only in length, had to be made. Between the eighth and ninth portages our course, hitherto easterly, turns to the south. Leaving the ninth portage, about an hour's paddling against a stiff current, on a course somewhat west of south, and at the end of which it was necessary to use the tow-line for a short distance, brought us out into a lake, from one-third of a mile to a mile in width. From a point below our last camp to this, only a few low rock ridges or rather reefs crossing the river have been met with. The country here is for the most part flat, with a light sandy or gravelly soil, and much of it has been over-run by bush fires, not many years ago. I should say that the greater part of this land would afford fair pasture if sown with the seed of grasses adapted to the soil and climate. On the river banks and bottoms a proportion of third-rate arable land could be obtained, which will at all events grow good crops of hay, roots, and barley, if not other grains.

In the lake which we have now entered, our course in a short time turned easterly, and the width increases to nearly a mile. It is called by the Indians "Nemenkawah." There appears to be a large marsh at the north-western side, which, like many others on the Height of Land, will some day or other become valuable for the hay it is capable of affording. In a mile and a half or so we arrived at where the river enters on the south side of this lake. Here there may be seen a few stunted black ash growing. Up this we pursued an easterly course for some two hours nearly, when we came to a rapid with a fall of eleven feet, requiring a portage (the tenth), about 100 yards in length, to be made. At the upper or eastern extremity of this portage I noticed another tree on which was marked "C. P. R., R. McLennan, September 15th, 1881." Above this, the river continues very irregular, rarely showing any well-defined banks, but opening out into small ponds and lakes, and again contracting several times in the course of the next five or six miles. The bearing is equally changeable, varying from east north-east to south-west, but on the whole south-easterly. About six miles from the last (tenth) portage we entered a lake, seemingly four miles in length by a mile in width. We take a south-east course along this for half a mile only, when we come to where a river enters on the east side. The route is up this and varies from east north-east to south south-east, alternately river, lake, pond and river, for a stretch of some three miles, terminating at a fall of six or seven feet in height, and a portage (the eleventh), ninety yards in length on the north-east side. This fall is called Ka-ka-gee-pid-jee-wan. Immediately below the fall, on the opposite side to that on which the portage is situated, there is a vein containing both copper and iron, the first in the form of a yellow ore and the latter as pyrites and "gossan," but in what quantity it was impossible to ascertain without tools, and more time and labour than we could afford. In a more favourable locality it might be worthy of the attention of the explorer. We now entered a good sized lake above this portage, and camped on the north side about a mile and a half from the fall. Where our camp was pitched a ridge or point runs out for a quarter of a mile into the lake, composed of sand and gravel of the drift formation. In some places the ridge is about thirty feet in height and the bearing is nearly north and south. Here I found on the beach a number of pieces of fossiliferous limestone similar to those I got two years ago on Lake St. Joseph, at the source of Albany river, and likewise to those gathered at and above Flying Post, on the Ahkuckootish, and Matawagamingue Post on the Matagami branch of Moose river last year; all of which, I think, can be plainly identified as having come from the Devonian rocks lying to the south of James' Bay.

The rocks met with to-day have been mostly greenish and grey-coloured schists, belonging, it is supposed, to the Huronian formation. In some places it had very much the appearance of a rock I have met with on the lakes at the source of the Abittibi river.

The timber, where standing, consists as usual largely of tamarac, spruce and cedar, with an increase in the quantity of rough bark or banksian pine. These are not large, being often too thick or crowded to admit of their attaining any great size. No red or white pine have so far been met with, but on the drier ridges, birch and aspen are common. I have seen no clays the last day or two, but banks sometimes thirty feet or more in thickness of fine grey sand have been observed in several places. I have no doubt, too, that the gravelly ridges frequently met with cover no inconsiderable portion of the surface not taken up with lakes and swamps.

June 23rd.—On starting this morning our course was from east to north-east up the lake on which we had camped, for some two and a-half miles. This brought us to the twelfth portage, which proved to be one of the longest met with on this route, being little short of two miles. It passes partly over a muskeg or peat moss, on which many of the plants usually met with on the muskegs, north of the Height of Land, were found growing. The portage takes an easterly course, and terminates at a small round pond or lake, apparently about half a mile in diameter. My barometer did not indicate much rise. The bank of this little lake, where the portage comes out, is composed of drift sand, and in it many bits of fossiliferous limestone were noticed.

It was two o'clock in the afternoon before we had got everything over this portage and were again ready to resume our journey. A mile and a half of lake and marsh, on a course a little south of east, brought us to a small stream, which soon led into a larger one This is probably a tributary of the Mama-om-minnikan, which we have followed up from Lake Nipigon. This tributary flows north, and in about one-third of a mile enters a lake seemingly four or five miles long in a N.N.E. direction, and from half to three-quarters of a mile in width. The banks of this lake are very low, excepting at the north end, where the land rises to a height which I think cannot be less than 100 feet. On a point in this lake I again found pieces of fossiliferous limestone, not less than 100 pounds in weight, imbedded in the sands and gravel of the drift. The point referred to is on the east side of the lake, and about half a mile from a small stream which we now reach and proceed to ascend. This stream is not more than fifteen yards wide and comes from the north-east. In half a mile we arrived at a portage (the thirteenth) about 100 yards in length. Again embarking, three-quarters of a mile more brought us to the fourteenth portage which we found to be three hundred yards long. The fall in these two rapids is not more than ten feet. Again starting out from the upper end of this portage, we had only ascended about 200 yards when we entered a long narrow lake, the source of the stream we were following. This lake seems to be not less than four miles, and may be considerably more, in length, but it is only from six chains to half a mile in width. The bearing of its longer axis is N.N.E. The banks are very low, and timbered with small spruce and tamarac. Pursuing now a north-easterly course, at about half the apparent length of the lake, we make the mouth of a stream on the east side, which we ascend. The water is clear and the banks low. The timber is small, consisting of spruce, tamarac and cedar. In a mile or so we came to a good sized lake, and here we camped.

There were great numbers of pike feeding in the river at this point, and the voyageurs caught, with a trolling line and spoon, eleven, weighing thirty-five pounds, in less than half-an-hour. My guide says that there are good whitefish in this lake.

At this camping place, I measured aspen that were four feet in circumference, white birch five feet and tamarac four feet. The soil is light and sandy, but is covered by a good thickness of vegetable or leaf mould, and even at this elevation (and we must be now almost on the water-shed) I have no doubt excellent crops of potatoes could be grown on land of this description.

Joseph, a native, and one of my guides, encouraged by the other voyageurs, favoured us with a specimen of his vocal powers in the language and style of his race. Each verse of the song began with "Yea yea, yauchee, O yea," and was continued and ended by a quick succession of nasal sounds and grunts that I am utterly unable to describe. He accompanied himself by drumming on the canoe, which, after being unloaded, had as usual been hauled out and turned bottom up. This song, or others set to the same air, is known to and sung by the Indian medicine men and conjurors, not only of the Ojibbewas but other tribes, and has, I suspect, its origin in some form of religious incantation. The drum and these original songs are rapidly disappearing, but may still be occasionally heard in the solitudes of the wilderness, and generally in the dead of the night on the Height of Land.

June 24th. –This being Sunday, and my crew in need of rest, we remained encamped, although morally, I think, we would have been quite justified in going on, as there is no little probability of our running out of provisions before we can reach Long Lake and replenish our stock.

June 25.—Rising at 4 a.m., we got once more under way about 5 o'clock.

This lake cannot be less than ten miles, I think, in length; and appears at its greatest to be about four miles in width. The number of islands, however, prevents anything like a comprehensive view being obtained of it. The longer axis bears as usual about N.N.E. and S.S.W. Pursuing a direction between N.E. and E.N.E., diagonally across the lake, we came in about an hour to where the fifteenth portage takes off on the east side of the lake. This is, I believe, the Height of Land Portage on this route. It is about a quarter of a mile in length, and passes over a ridge 40 feet or so in height of drift gravel and sand. It terminates at a small lake about half a mile wide. No rock was met with in place on our route through the large lake on which we were last camped, but numerous pieces of fossiliferous limestone were seen at the bottom and on the gravelly beaches.

The small lake north of the water-shed is, I think, a little higher than the larger one to the south, but not more than eight or ten feet. Crossing this small lake we came to its outlet, a small stream only a few yards in length, and running into another little lake. The water is very clear and many pieces of limestone could be seen in the gravelly bottom. A partial unloading or demi-charge was required here. Crossing this second small lake in an easterly direction we came in a mile to the commencement of the next or sixteenth portage. This is level and swampy, and in 250 yards brought us to a pond about one-third of a mile wide. This crossed, we landed and found ourselves still in a swamp. Here commenced our seventeenth portage, one of the longest and worst, not only on this route but any other I have yet passed over. It is about three miles in length, and for the most part over muskegs so wet and soft that the men with loads on their backs frequently sunk down almost to their knees. At the end of the first mile the portage is interrupted by a small pond which it was necessary to cross in the canoe, but the whole is reckoned as one portage. After making three stages, or about two miles, we camped for the night, my men being very much tired.

June 26.—Calling all hands soon after four o'clock, a hurried cup of tea and a bit of biscuit were taken, and once more they set to work on the portage. The chief difficulty was the canoe, which was much too large and heavy for the route. The black flies and mosquitoes, kept back by the cold spring, now seemed determined to make up for lost time, and harrassed us almost beyond endurance. About 9 a.m. everything had been got over, and we embarked on a small lake. We had not gone, however, more than half a mile when we came to another, the eighteenth portage. This was only, however, seventy-five yards in length. It terminated in a stream fifteen to twenty yards wide, the water of which flowed towards the east. This stream, on which we now embarked, proved very crooked, swinging about from north te south, but pursuing on the whole an easterly course. The land here on both sides is low and swampy, but supports, nevertheless, a good growth of tamarac, many of which are sufficiently large for railway ties. In about an hour we arrived at the nineteenth portage. This proved to be a quarter of a mile in length, with a fall in the rapid of not more than ten feet.

This portage terminated at the western extremity of a deep bay, on the west side of Little Long Lake, the waters of which, like those of Long Lake itself, flow northwards into the Kenogami river, and finally, by the Albany river, into James' Bay. We had not proceeded far when Mr. Hamilton, who was taking and keeping a record of the courses for me, noticed a strong local attraction or variation of the needle. As it was just about noon and the day was bright and clear, I had no difficulty in satisfying myself that such was really the case, for the needle was deflected upwards of 90° from the proper point. Knowing that this must, in all probability, be owing to the presence in that vicinity of magnetic iron ore, and describing a circle around the upper end of the bay, noting at the same time the variation of the compass as we changed our position, I became convinced that there is a body of this ore in the bottom of the lake at that place. I examined several exposures of rock on the south-west side of the bay, and although I could find none of the ore, the formation and character of the rocks were such as are frequently associated with magnetic iron. We had proceeded thus for about three miles, keeping the south side of the bay, when we came to several small islands, on one of which (a mere rock) we landed for dinner. While I was examining the rock in places, one of my voyageurs picked up a loose stone and, surprised at its weight, brought it to me. I at once saw that it was a rich magnetic iron ore. Further search brought to light several other pieces, one of which was a mass of at least 70 or 80 lbs. weight. Nothing, however, could be seen of any ore *in situ* on the surface. Thinking that the ore might be under the surface of the water, and that the pieces in question had been detached and shoved up on the islet by the action of the ice, I made a careful examination of the north end, and was pleased to find my conjecture realized, and that the ore was evidently there "in place." I would have liked to have devoted a few more days to a more thorough examination of this interesting locality, but, owing to the difficulty of the route and the length of time occupied, our provisions were nearly exhausted, and it was necessary to push on.

On starting, our course was south-easterly, and four miles brought us out into the main lake, which is at this point from one to two miles in width. We now followed down this lake in a north-easterly direction for ten miles, and camped for the night on the west side.

The land bordering on Little Long Lake does not on either shore rise to any considerable height above the level of the water. Judging by the eye, it ranges from ten feet to fifty or sixty feet. The soil where I went ashore was a gravelly or sandy loam, and tolerably dry. There is a much less proportion of recently burnt land, and a greater proportion of green bush than on any other large lake I have so far met with. The timber is mostly aspen, not large, but healthy. There does not appear to be any considerable quantity of spruce, nor was that I saw of large size. There is a good deal of tamarac six to ten inches diameter. Black ash was noticed in several places, but it was not more than nine or ten inches in diameter and stunted. There is a mixture of white or canoe birch everywhere on the Height of Land, excepting on the muskegs and swamps. No red or white pine were observed. Mr. Gamsby, C.E., speaks in his Report of seeing a considerable tract of land on this lake fit for cultivation, the soil being a clay loam similar to that at Long Lake Post.

June 27.—Soon after we had started this morning we entered a marshy river, which, after following some two miles, brought us to a point at which the twentieth portage takes off. It is a mile long; has an easterly bearing, and terminates at a small stream. This portage passes over a muskeg or peat moss, and was so bad that it took the men four hours' hard work to get over it. Proceeding up this stream for a few chains we landed on the opposite side and commenced making another, the twenty-first portage, three-quarters of a mile in length and entirely over muskeg of the softest and worst kind. It terminated at a pond about a quarter of a mile in diameter. Having crossed over this pond, still another portage (the 22nd) was encountered. This is half a mile in length, and passes over a dry ridge some fifty or sixty feet in height. There does not appear to be much if any difference of level in the twentieth and twenty-first portages, but in this, the twenty-second, there is apparently a fall of forty or fifty feet. It terminated at a good-sized lake. Here we camped for the night, having got almost everything over but the canoe.

It is unnecessary to describe the muskeg or peat bogs in which we have been floundering for some eight hours to-day.

On the drier ridge last passed over the soil is a sandy loam, containing a good many boulders. The timber mixed and healthy. The rock seen to-day has consisted of syenites, traps and slates of the Huronian Formation. Many small veins of quartz were seen, some of which contained iron pyrites and probably a small percentage of copper ore.

June 28th.—The lake on which we now embark is about half a mile wide, but of considerable length in a N.N.E. and S.S.W. direction. The banks are low and covered with tamarac, spruce, aspen and birch, but chiefly tamarac, which is seen of all sizes up to sixty inches circumference. Pursuing a north-easterly course for two miles, we landed on the east side of this lake, at what was to prove the last portage. The first half of this, the twenty-third portage, was well enough, but the timber on the second stage had first of all been killed by fire, and then fallen in all directions over the path. Leaving the canoe and all our baggage, excepting a few of the more portable articles, we were compelled to pass sometimes over, and sometimes under this confused mass of fallen tamarac trees, frequently stepping, jumping and scrambling from tree to tree without being able to set foot on the ground for as much as fifty yards at a stretch, and suffering greatly from the heat, which was very oppressive. Finally we came out on Long Lake in view of the Hudson's Bay Company's Post which was only half a mile distant on the other side of an arm or bay. Being speedily seen by some of the Indians at the Post, we were ferried over and hospitably received by Mr. Godchere, the gentleman in charge of Long Lake House. The distance from the mouth of the Sturgeon river, Lake Nipigon to Long Lake House, roughly estimated, is about ninety-three miles, and number of portages twenty-three.

June 29th.—The brigade from Pic with the Company's stores, and by which I expected our own supplies, has not arrived, and Mr. Godchere says that it will be at least a week before it can do so.

My voyageurs went back to day to bring our canoe and baggage which we had been obliged to leave behind owing to the impassable condition of the last portage. Mr. Godchere sent an Indian with them who knew of another portage which, although longer, was not obstructed with fallen timber, and by this our things were all brought to the Post this afternoon. Fortunately Mr. Godchere was able to spare us a week's provisions, more particularly pork, of which our supply was entirely exhausted two days ago. My guides from Nipigon were paid off and furnished with provisions and a small canoe wherewith to return home. They will start early in the morning and expect to accomplish the return trip in five days. We have taken ten days exclusive of Sundays, on which we did not travel. It was on the portages where we experienced the greatest delay; with very little more clothes than they carry on their backs, a single blanket each, a frying pan, small tin boiler, and a couple of tin cups or panikins and a small axe, only, portaging is minimised: One man takes the canoe on his shoulders, and the other takes the whole of the baggage and provisions, and they march straight over the portages and embark again at the other end with little loss of time, as compared with what takes place when three or four trips backwards and forward are necessary.

Letters were written and despatched by the returning men to be mailed at Red Rock.

June 30th.—The Hudson's Bay Company's Post, known as "Long Lake House," is situated at the north end of the lake. The ground on which it stands is from fifteen to twenty feet above the level of the water, and the land in the rear (or to the north) is low and flat. A point which stretches out into the lake for half a mile a little to the west of the Post, rises to the height of forty feet, and is composed of almost bare syenitic granite. The buildings consist of a tolerably comfortable dwelling house occupied by the officer in charge, a shop or trading store, a warehouse or store for provisions, and a couple of small log houses for servants. Here the Indians occupy wigwams of birch bark even during the summer season, whereas on and near the coast of James' Bay, tents of duck or cotton are in almost universal use in summer. The clearing around the Post is only about ten acres in extent. The soil is a clay loam, and the first almost that I have met with since we left Lake Nipigon. This clay when tested with acids effervesces freely, and contains evidently a notable percentage of carbonate of lime.

Timothy grass, some of which has been introduced, grows well, and white clover, which I did not see, should also grow well, and would greatly improve the pasture. The marshes afford abundance of hay for winter. Only four head of cattle are kept, one of these an ox, said to have been raised at the Post, particularly attracted my notice on account of its fine size and condition. This ox measures eight feet in length from the setting on of the tail to the horns, five feet seven inches in height at the shoulder and ninety-four inches in circumference or girth behind the shoulders.

What crops can be safely grown here I cannot say from personal knowledge or observation. Potatoes are perhaps the only crop regularly grown, but these are, I understand, planted and come to maturity every year. They are very backward and late, however, this year, but I have no doubt that with proper seed and good cultivation, not only potatoes, but all the hardier grains and roots can be grown in ordinary years.

The following kinds of fish are found in Long Lake :—Whitefish, lake trout, speckled trout, pike—commonly called "jack-fish" by the Indians and Voyageurs—pickerel or dore, bass (striped), suckers, both red and white ; marais or cat-fish, and silver fish before alluded to, as being probably a variety of whitefish. The sturgeon, although not found in the lake, is got a short distance down its effluent, the Kenogami River. The lake trout and whitefish, especially the former, are remarkably fine.

Of game of the deer species, the caribou or rein deer is most common, but still far from numerous, Mr. Godcheer, who is, I expect, a good hunter, killing only two or three in the course of the winter. The moose is still more rarely seen or killed. The red deer of Muskoka and other parts of Canada is unknown. Rabbits are very important here, as they are in most other parts of the territory, north of the great lakes, and their flesh often forms during the winter season, the principal food of the natives.

Of feathered game, ducks and what are erroneously called partridges, are the most common. Both plover and pigeon are very scarce on the height of land. Geese are only seen on their migrations to and from the north.

The furred animals are chiefly the mink, otter, beaver, lynx, fox, bear, marten and muskrat, the first and last being, I understand, the most plentiful in this district.

The following anecdote of a lynx, told me by Mr. Godchere, is worth recording. Accompanied by an Indian he was going in a canoe down the Kenogami river for some furs. It was not long after the ice had broken up, and the wild geese were migrating northward, alighting to rest and feed at favourite spots, as they crossed the height of land. Suddenly they came upon a flock of wild geese, whose attention seemed to be earnestly directed toward something on the shore. Concealing themselves under the bank, and approaching cautiously, they espied a lynx, which by its antics had strongly excited the curiosity of the geese. It was crouched on the bank close to the water, in such an attitude that while ready to spring on its prey, it was entirely hidden among the tall grass and reeds—with the exception of its hinder parts, and little stump of a tail. These were elevated so as to be seen by the geese, and jerked and wagged about with great rapidity. The flock meanwhile approached closer and closer, until they were within a few feet only, when with a sudden bound the lynx sprang upon one of the nearest geese, and quickly bore it off into the bush. Mr. Godchere was about to shoot at the beast, as it came ashore with its prey, but the Indian restrained him—indicating by signs that it would return shortly. The Indian was right in his conjecture ; the lynx returned in a few minutes, and resumed its old position and tactics. Again the geese were lured on, and again the lynx sprang with lightning rapidity and unerring certainty on the nearest goose. They remained quietly watching this extraordinary performance, until the lynx had caught no fewer than four geese. It once more returned, but the remaining geese were by this time thoroughly alarmed and little inclined to approach, and the Indian thinking it was now his turn, took deliberate aim at the beast and shot it. On searching a little way back in the bush the four wild geese were found, lying quite dead, but otherwise uninjured. The hunters thus secured both the lynx, which is prized by them alike for its fur and its flesh, and also its victims, the geese. The most remarkable thing in this incident is that a blood-thirsty and hungry creature like the lynx should be thus able to restrain and control its appetites, postponing an immediate and present gratification for some time, in order to secure a still greater good, conduct which would seem to imply the possession of reasoning powers, or of instinct so like reason as to be indistinguishable from it. It is quite possible the creature had young ones to feed at this time, and hence was under a strong impulse to secure for them as well as herself as much food as she could.

July 1st.—Sunday—The barometer fell rapidly last night and this morning, until at two p.m. it stood at 28.4 inches. Anticipating a storm I had my tent pegs driven firmly down, and the canoe secured. We had barely finished when a storm of wind arose from the north-east, and raged with a violence very unusual at this season of the year. Notwithstanding the precautions I had taken, my tent was blown down and I was compelled to seek refuge in Mr. Godchere's house. The atmosphere had a smoky appearance, as if a bush fire was raging at no very great distance, and the sun, although unobscured by clouds, was red and could be looked at with the naked eye without any great discomfort. About three o'clock in the afternoon, several Indians came to say that they observed very singular spots on the surface of the sun. On looking I saw these quite distinctly. Indeed I do not remember to have seen them so plainly, or so large before. Two spots pretty close to each other, and near the centre of the sun were particularly large, the longer axis of the bigger one seeming to be about one-thirtieth of the apparent diameter of the sun. A number of smaller spots were less distinctly visible in the lower right limb. This remarkable appearance continued for two hours, when the sun became entirely obscured by the thickness of the atmosphere. The Indians, both men and women, gathered around us, being as I suspected rather alarmed at the peculiar appearance of the sun, co-incident as it was, with the high wind and apparently approaching fire. Our coolness, and the curiosity only we appeared to manifest in the phenomenon, seemed to reassure and satisfy them that we did not apprehend any real danger.

July 2nd.—This afternoon I went with Mr. Godchere to see his potato field, about a mile distant from the Post. It is situated on a bay to the east of the Post, and was only cleared and fenced two years ago. The surface was flat, undrained and elevated but slightly above the level of the water. The soil is a cold, brownish clay, and contains (a most unusual thing) no calcareous matter. I take this to be a fresh-water clay, deposited by the lake when a little higher than at present. The potatoes, although planted nearly a month ago, are not yet up above the ground. The sets have, I think, been too deeply covered for one thing, and ground of this nature is cold and backward at any rate. The cultivation of heavy clay land, particularly if level and wet, requires both skill and capital. Where the seasons are short, warm sandy or gravelly loams are, I think, best for the crops of pioneer settlers. With a little care in the selection of seed, forcing in spring, drainage of the land, and good cultivation afterwards, there can be no reasonable doubt, however, that grasses, roots, and even grains of many kinds, can be grown in this climate, although it is, I am persuaded, inferior in some respects to that of Moose Factory on James' Bay. Moose Factory, it is true, lies a hundred miles or so further north. but it is a thousand feet lower than Long Lake House. Other conditions being the same, a difference of from 300 to 400 feet in elevation is, I believe, considered nearly equal to one degree of difference in latitude. This, if correct, would give Moose Factory an advantage equal to that which might be expected to be exhibited by a place at the same level nearly two degrees south of Long Lake House. But the proximity of Moose Factory to Hudson's Bay, and its exposure to cold north-easterly winds, lessens to some extent, in my opinion, the advantages of its lower position and better soil.

July 27.—I explored to-day the west shore of Long Lake from the Post to what is called "the Narrows," and on my return examined the opposite or eastern side. The rocks are syenite, quartzite and Huronian slates. The strike of the slate rocks appeared to be north-easterly, and the dip is towards the north-west. The greatest elevation attained would seem to be about 100 feet above the level of the lake. I discovered no minerals of any economic value, but found many pieces of fossiliferous limestone on the east side of the lake.

The timber is mostly aspen, of which there is a good deal on the west side.

At "the Narrows" we saw the first wild pigeon met with on this trip. I cannot account for their scarcity on the Height of Land at this season, or understand where the great multitudes of these birds that are frequently seen going north stop to breed. It is certainly not between the great lakes and James' Bay, or I should have seen many more of them. It is at the Narrows where the Hudson Bay Company's fishermen have their lines set to catch lake trout, some of which weigh upwards of twenty pounds, and are of remarkably fine quality. On my return the Company's men were digging post holes for a fence, and I obtained several samples of clay from one to three feet or more in depth. On testing I found them to be without exception highly calcareous.

Having seen all that was of interest in the immediate vicinity of the Post, I concluded to go and meet the brigade from Pic, and get the supplies which I expected by it, and then be in a position to resume my journey northward sooner than would in all probability be the case if I waited their arrival at Long Lake. The progress of the brigade, composed as it is of heavily laden boats, is necessarily slow. I should have liked to have explored Long Lake from end to end, but this has been done already, as regards its geology, by Dr. Bell; and by Mr. Beatty, P.L.S., for the Crown Land Department, in 1870.

The following extract from Dr. Bell's report will be interesting to those who have not seen it:—

"KENOGAMI OR LONG LAKE.

"The southern extremity of Kenogami or Long Lake is about twenty-two miles due north of Jackfish Bay, opposite the Slate Islands, The Height of Land between the waters of Lake Superior and those flowing into Hudson's Bay, passes about one mile south of this point, or twenty-one miles north of Lake Superior. Long Lake, for the first eight and a-half miles, runs nearly due north. The breadth in this part varies from two to forty chains, and averages about twenty. From this point to the outlet its course runs nearly straight, bearing N. 30° E. (ast.); so that its general bearing, from one extremity to the other, is about N.N.E. The average breadth of the main section, forty-six miles in length, found by taking the mean of fifteen measurements, at equal distances, is 104 chains, or a little over a mile and a-quarter. Following the axis of the lake, the whole length will therefore be fifty-four and a-half miles, while in a straight line between extreme points it is fifty-two miles. As already stated, the shore line measures 192 miles, exclusive of islands. The following are the principal streams which enter Long Lake:—

"1. Hanes River, on the west side, at eight and a-quarter miles from the southern extremity.

"2. Ka-we-sa-qua-ga-ma, or Paint River, which enters the same side from the south-westward at two miles north of Beatty's line.

"3. Ka-muck-a-ti-wa-ga, or Black-water River, which enters the same side from the north-westward, three miles north of Beatty's line.

"4. Kinonge, or Pike River, also on the west side, eight miles from the outlet.

"5. Making-Ground River, on the east side, one and a-quarter miles from the outlet.

"The valley of Black River, and the southern part of Long Lake, form one continuous depression running due north and south. Its sides are lined with long moraines, composed of well rounded boulders. Numerous ponds lie amongst these in the lower levels. Black River takes its rise in a chain of these ponds, connected together by short links of sluggish water; the northernmost pond being only a little over a mile south of Long Lake. This route can be followed in small, light canoes to Lake Superior; but is never attempted by larger ones on account of difficulties in the navigation of Black River. The country around the southern part of Long Lake is rugged and mountainous, with very little covering of any kind upon the hard gneiss rocks, What appeared to be the highest of these hills, lies a distance of two and a-half miles west of the extremity of the lake, and is, by barometrical measurement, 540 feet over the level. Going northward the hills become gradually lower, until about half way down the lake (or at thirty miles.

on the west side, and twenty-four on the east, from the outlet), the country has assumed a comparatively level aspect, with an occasional hill from fifty to one hundred feet high.

"The line run last summer by Mr. Walter Beatty, P.L.S., south-easterly from Lake Nipigon intersects the west shore of Long Lake at fifteen and a-half miles from its southern extremity, or twenty miles north of Herrick's line. The latitude of this point, from the mean of several observations both of the sun and pole-star, I found to be 49° 22′ 30″. Around the southern part of Long Lake, and as far north as Beatty's line, the prevailing rock consists of the common variety of gneiss, with the usual W.S.W. strike. But from this point to within eighteen miles of the outlet, a very coarse, light reddish grey granite prevails. It is composed of whitish quartz and very large crystals of light coloured feldspar, with occasional flakes of mica. At the above distance the tender gray mica-schists, similar to those of McKay's Lake (and also cut by the same kind of granite veins), begin and continue for about two miles down the shore. Near the termination of the two miles referred to, finely grained, highly fissile mica-schists make their appearance, and are almost continuously exposed for about eleven miles along the east side, and for about the same distance (or to the Kin-onge River) on the west side. They stand nearly on edge all along, the strike gradually changing from about N.W. on the southern to S.W. on the northern side of the above breadth. The prevailing colour is dark greyish-green, but some considerable bands are yellowish-gray and olive-coloured, with a talcoid aspect. The north-eastern strike of the northern limit of this mica-schist formation continues to the Making-Ground river, which it intersects at about two miles in a straight line from its mouth. In one place on the east side of this narrow part of the lake ordinary gneiss running S. 70° W., and dipping northward at an angle of 45°, is seen below the fine green mica-schist. A small island in the same neighbourhood is composed of a rock resembling the imperfect grey gneiss of Hollow-rock Lake and other localities already mentioned. It runs S. 70° W., is hard, fine grained, grey, silicious and somewhat micaceous, and contains numerous small patches and short cross veins of white quartz. Northward from the limit of the greenish mica-schists just described, the shores and islands of Long Lake are occupied by a massive, reddish grey, rather coarse-grained syenite, composed of translucent quartz, white and red feldspar, and dark green hornblende, with a little black mica. The same rock continues to be exposed in the hills on either side of the English river, as far down as the first portage."

FROM LONG LAKE HOUSE TO PIC RIVER POST.

July 4th.—Mr. Goodchere having obtained a guide for us, we started about half-past three in a canoe belonging to him which was a good deal lighter than our own. Half an hour's brisk paddling on an E.S.E. course brought us to the mouth of the Making-Ground river, a sluggish stream about two chains in width, but which contracted as we ascended, until at the end of three miles it was little more than ten yards in width. We continued our ascent of this little stream on a southerly course for about eight miles when we camped, it being now seven o'clock. The country passed through is for the most part a tamarac swamp, with low, bare rocky knolls and reefs here and there projecting above the generally level surface.

The tamarac is sometimes of useful sizes on the drier parts of the swamp, but much of the timber has been destroyed by fire.

July 5th.—Leaving camp, about a mile and a half brought us to the first, or Summit Portage, which is nearly two miles in length. This portage crosses the watershed and terminates at a lake called Mud Lake, the waters of this lake flowing into Lake Superior, and those of Long Lake into James' Bay. The ridge where passed over on this portage is nearly seventy feet in height, but there is another portage over which the boats employed by the Hudson's Bay Company are hauled, and where this dividing ridge is much lower, if not almost level. Mud Lake, on which we now embark, is about four miles long and one-quarter to one-half a mile wide, and if anything a little higher than Long Lake. Having passed this one on an E.N.E. course, we enter a small and very crooked stream which we follow down on an easterly course for about a mile, when we enter another lake which is crossed in a S.S.E. direction, bringing us in half a mile to the outlet. This is a very serpentine stream, but has a general bearing of south, and in another half a mile it enters an arm of a very irregular but seemingly large lake called, I believe, McKay's Lake, which we traverse in various directions, but on the whole eastward for twelve and a half miles. We now come to the river Pic which carries off the waters of these lakes. It is here from one to two chains wide, and also very crooked. We had only just entered this when a short demi-charge was necessary, but did not occasion much loss of time. At the end of nine miles, on an average course of S.S.E., we camped, having made about thirty-one miles to-day. With the exception of the last stretch of nine miles, the country, as seen from the canoe route to-day, has been on the whole, rocky and barren. The land on the banks of the river is sometimes low and swampy, and in others dry and sandy. On the first the timber is chiefly spruce and tamarac, and on the dry sandy land, banksian pine of small size. The drier land might be converted into tolerable pasture, and much of the lower ground would, if cleared and drained, make good meadows.

July 6th.—In three miles after leaving this, our second camp, on a S.S.E. course, we came to a rapid with a fall of about five feet, where on the upward trip a portage would most likely be necessary, but which only requires a demi-charge on the downward trip. In other three miles we entered a small lake about three-quarters of a mile in length. At the end of this lake another demi-charge was made. Below the rapid, which makes this demi-charge necessary, the route passes through another little lake, on the east side of which there is a curious detached rock. Course still S.S.E. One mile and a quarter of alternate lake and river brought us to another demi-charge, the portage around which was only about 200 yards in length. In the next five miles we passed four small rapids where it was necessery to portage more or less most of our things, but down all of which the canoe with some of our baggage was run. Between the last of these demi-charges and the second regular portage, which occurs at the end of this stretch, we met the long-looked-for brigade from Pic. It consisted of three boats, each capable of carrying about three or four tons, and the whole manned by about twenty men. On enquiry we were greatly disappointed to find that they had nothing for us, and I at once determined to go on with all speed to Pic, which we hoped to be able to reach in two days.

The portage at which we soon after arrived was quarter of a mile in length and fall about twenty feet. From this to the third portage was not more than three-quarters of a mile. The fall here was twenty-five feet, and length of the portage half a mile. Again embarking, we had not proceeded more than half a mile when we came to the fourth portage, called "the Long, or Dying Portage," This is two miles in length and the fall as indicated by my barometer, is about 105 feet.

Crossing this, and resuming our journey in a direction generally ranging from S.E. to S., three miles more brought us to the fifth or Sand Hill portage. This is a quarter of a mile in length, with a fall in the river of nearly one hundred feet, the greater part of which is taken in one or two jumps. This is much the finest fall on the Pic river. So steep is the portage at the lower end, that the Hudson Bay Company have found it necessary to erect a capstan and permanent rollers, by means of which their boats are hauled up. Two miles and a half below this we came to the sixth portage, about one hundred and fifty yards across, with a fall of about thirty feet. On this portage, being now late, we camped for the night, having made about twenty-three miles since we left the last camp.

July 7th.—This morning when I called the men, at four a.m., the thermometer was one degree below freezing, and damp clothes left on the gronnd were frozen quite stiff; indeed there was a little ice in one of our tins. Soon after leaving this portage a considerable tributary joins on the east side. From this junction the course of the river, which has hitherto been more or less east of south, becomes more westerly, or say S.S.W. to S.W. The river is here thirty or forty yards in width, with a deep, strong current. Ten miles down stream brought ns to the seventh and last portage. The length of this portage is only one hundred yards, and the fall in the river forty feet. Leaving this at a few minutes past eight o'clock a.m., we met with no further obstruction, and reached the Hudson Bay Company's Post, at the mouth of the river, at 10:30 p.m. The distance from the last or seventh portage to the Post, following the turns and bends of the river, I estimated at not less than fifty miles, or say sixty miles from our last camp. The river, however, is one of the most crooked I have ever been on, and the distance in a straight line, or as the crow flies, is probably not more than two-thirds, or at most three-fourths of sixty miles. Dr. Bell estimates the distance at upwards of seventy miles by the river. The officers and servants of Hudson Bay Company's Post having all retired to bed, we did not disturb them, but camped for the night.

July 8th.—This being Sunday, was truly welcomed by my tired voyageurs as a day of rest.

On making enquiry I was glad to find that our pork and flour had come. Indeed they had arrived, as was expected, before the departure of the brigade for Long Lake. But unfortunately the letter to the officer in charge, telling him when, where, and how to forward them, did not reach him until three days after the brigade for Long Lake had left.

July 9th.—As the mail steamer was expected to-day, and we had some arrangements to make, I concluded to defer our departure until to-morrow.

July 10th.—The steamer did not arrive until this morning, and then, greatly to our disappointment, brought no mail. Taking leave, therefore, of Mr. and Mrs. Spence, whose kind hospitality we had enjoyed, we started off about two o'clock on our return to Long Lake.

It is not necessary to go into the particulars of our return trip, further than to say that, although with a light canoe we had been able to accomplish the down trip in three days and a half, we soon found that with a heavily laden canoe and a strong current against us, we were likely to take at least twice as long to get back again. Indeed it required three days to get over the stretch that had been made in our last day's journey coming down and, with all due diligence it was the evening of July 16th when we reached the Height of Land, or Summit Portage. Whereas only seven portages were needed one way, some eighteen had to be made on the up trip.

On this last portage we found Mr. Godchere encamped with the brigade, and almost all the Indians we had seen at Long Lake House. They were on their way, the brigade for another load of supplies, and Mr. Godchere on business. Many of the Indians were going down to get their annuity from the Indian Agent, whom they expected to meet at Pic. As it had been raining all afternoon, and my men were both wet and tired, we camped here also. In consequence of this wholesale exodus of the Indians, I had serious misgivings as to the possibility of obtaining guides at Long Lake to take us on to English River Post. The Indian whom Mr. Godchere had expected to accompany us had altered his mind, and was now with the rest on his way to Pic, and could not be persuaded to return.

July 17th.—A very miserable wet morning, and even the Indians, anxious as they were to get to Pic, did not seem inclined to make an early start. It cleared up a little, however, about ten a.m., and at twelve, with the assistance of some of the Indians, we had got all our things over the portage, which, as already mentioned, is nearly two miles in length. I found bits of fossiliferous limestone in crossing, on the very top of the dividing ridge or Height of Land. The watershed here is at least 1100 feet above James' Bay or the level of the ocean, Long Lake itself being 1066 feet above the sea.

Embarking on Making-Ground river, we reached Long Lake House at five o'clock in the evening. The distance by this route from Pic Post to Long Lake House is about 123 miles.

The country lying between the north end of Long Lake and Lake Superior, as seen on the route I have followed, may be divided into two sections or parts, in each of which the physical features and soil differ materially from the other.

The first is that comprised between Long Lake Post and the Dying Portage.

The second between Dying Portage and Pic, on Lake Superior.

That section of the country situated to the north of Dying Portage is a part of, and belongs to, what I have in former reports called the Plateau, lying between the Great Lakes and James' Bay. The elevation of this plateau will average about 1,000 feet above the level of Hudson's Bay, ranging from 800 to 1,400 feet, as about the extremes.

It embraces a large extent of territory on both sides of the water-shed, but more particularly on the north side. The character of the country and the soil is better generally on the north than the south side of the water-shed, but there is usually a belt varying from a few miles only to fifty miles or more in width, of a poor, stony, sandy or swampy character, at or about the water-shed, beyond which to the north there is a belt of much more fertile land. With exception of the land about Long Lake Post itself, the country from thence to Dying Portage is, on the whole, poor both in respect of soil and timber, as seen on this route. Standing on the summit of the Long or Dying Portage and looking southwards, a good view of the country is obtained for six or seven miles around; or more properly embracing a semi-circle from east to west, by south. Two features can hardly fail to strike the spectator. First of all, the comparative smallness of the whole area, that appears to be bare rock. Secondly, after encountering lakes everywhere on the Height of Land, one cannot but notice their sudden disappearance. It would seem to me that, during the Glacial epoch, the ice, laden with the spoils of the softer Devonian rocks from the basin of Hudson's Bay, has worn great channels in the Huronian and Laurentian rocks, extending not only across the Height of Land where these channels, as Dr. Bell observes, often form the depressions now occupied by lakes, but has excavated numerous gorges leading down from the Height of Land to the coasts of Lakes Superior and Huron. The width and depth of these gorges has no doubt varied with the hardness and nature of the bed rock. But the depth ranges in general, I think, from one to two hundred feet, and in some cases even more. After these gorges and channels had been formed on the Lake Superior slope, it would further seem that they had been filled with the gravels, sands and clays of the so-called drift period. This happened towards the conclusion of the Glacial epoch. The whole surface, with the exception of the highest ridges, has most likely been more or less deeply covered with this drift.

All the principal rivers have their sources on the Height of Land, and the descent, especially of those which flow southwards, is exceedingly rapid. Thus, in the Pic river, commencing at the second portage, about two miles above Long or Dying Portage, and terminating at the lower end of the sixth portage, eight miles below, there is a fall roughly estimated at something like 300 feet, or thirty feet in a mile. This is an extreme instance, but anyone who has given the least attention to the effect of running water on banks of sand, clay or gravel, will be able to form some slight conception of the excavating and transporting power of a great body of water, such as is contained in many of these rivers, with a fall like that we have here. Thus we find, as might be expected, that the Pic river has in this stretch, and for many miles below it, cut its way down through the drift to a depth of from 100 to 150 feet, heavy banks of this material appearing sometimes on one side and sometimes on the other, and its downward course has been only finally arrested by the bed rock of the original glacial trough. Thus it is, I conceive, that this and various other rivers have been constrained as it were to follow the glacial troughs or channels to which I have alluded. This trough, as seen from the river and from the few ridges which I ascended, would appear to be from one to two miles in width. Down this channel the water of the river pursues its way, not in a straight, but in a zig-zag or serpentine course, swinging backwards and forwards from east to west within the limits prescribed by the rocky sides of the trough. Prodigious quantities of the drift have been washed down by the water of the river and its tributaries. Some of it has been deposited again, forming bottom land, but the far greater part has no doubt been carried out into Lake Superior. The great banks of sand at the outlet of Pic river have obviously, I think, come from this source.

What the surface may be like east or west of the narrow valley of the Pic river, I am unable to say, but within the valley itself there is more land, and land of better quality, than I had any expectation of seeing. In some places the soil is a sandy, and in others a clay loam, and although the arable land may be confined to limited areas, nearly all of it will make good pasture. The C. P. Railway is expected to cross Pic river some three miles from the mouth, and will no doubt lead to early settlement on the better lands found on this river, as far up as the first fall, some fifty miles or so from Lake Superior.

The timber consists of spruce, cedar, tamarac, balsam, canoe birch, poplar and aspen. I did not notice either red or white pine. Both the willow and the alder grow luxuriantly, and fringe the banks of the river in many places. Some of the spruce and tamarac are of fair size.

The rock met with is chiefly Laurentian, and I saw no strong indications of its being likely to contain veins of valuable metallic ores.

From ice marks I infer that the river is much flooded in the spring, the water evidently rising in some places at least twelve or fifteen feet above its ordinary summer level.

Settlers, especially immigrants, who are strangers in the country, cannot be too careful in ascertaining before selecting their lots and particularly the sites for their houses, the extreme height to which the waters of the adjacent rivers may sometimes rise, especially in the spring, and they should be guided by their own observation and judgment rather than by the statements of interested parties owning, and possibly anxious to sell them, the fertile but low-lying alluvial land situated on or near such rivers.

In view of the great additional interest attaching to the country north of Lake Superior, in consequence of the construction of the Canadian Pacific Railway, the early completion of which is now seemingly assured, I feel justified in quoting from the reports of Dr. Bell, Assistant Director of the Geological Survey, such information in reference to Long Lake, and the valley of Pic river, as will, I think, be acceptable to many who may not be able to obtain these reports for themselves. In 1870 Dr. Bell with a strong party visited and examined this section of the Province and made careful topographical and geological surveys of many of the lakes and rivers, full details of which will be found in the Report of Progress of the Geological Survey for 1870–71.

Dr. Bell has the following in regard to Pic river :—

"The Indian name of this stream is Peekting, or the Muddy river, so called from the large quantity of light-colored clay which it holds in suspension along its lower reaches on the melting of the snows, and after every shower of rain. It rises in McKay's Lake near the Height of Land, and enters Lake Superior near its north-western angle. From its mouth to the junction of the Black river, the breadth is about 700 feet, but above this point it contracts to between 200 and 300 feet, and becomes gradually narrower all the way to McKay's Lake, where it is less than 100 feet wide. The general upward course for the first twenty-one miles is almost due north. At the end of the second stretch, which is twelve miles long, bearing N. 30°, E, we arrived at Herrick's line; thirty-one miles in a direct course from Lake Superior, or forty-five miles by the river. The third stretch lies between Herrick's and Beatty's lines, and is twenty-one and a half miles long, bearing N. 15°, E. The first three portages occur in this section. From the intersection of Beatty's line the upward course curves round till it has assumed a W.S.W. course. The fourth stretch (seven and a-half miles between extreme points), includes the fourth, fifth and sixth portages, and terminates in the south-west angle of Waboosekon or Rabbit Lake. This lake has the form of the letter "L," each arm being two miles in length. The fifth section bears due north, with a length of twelve miles from the angle of Waboosekon Lake; it includes portage seven to fifteen, and passes through five small lakes. From the upper extremity of the fifth section, the upward course curves to the left, till at the end of six and a half miles, in a straight line, it has assumed a westerly direction, at the outlet of McKay's Lake. Half a mile below this lake there is a small rapid which occasions the sixteenth portage. The valley of the Pic will average about one mile in breadth. On either side, rounded hills of Huronian and Laurentian rocks are seen rising to heights varying from 100 to 400 feet, the more elevated being nearest Lake Superior. Below the third fall (which is fifty-three and a-half miles in a straight line from Lake Superior), the valley is everywhere filled with clay and sand, arranged in terraces, the most marked of which are at ninety and 150 feet over the river; the latter being the average elevation of the highest banks. These deposits are very much cut up by deep ravines, giving the valley an extremely uneven bottom. Clay prevails in the lower part of the deposit, and fine sand towards the top. The clay occurs in thin layers (usually from half an inch to two inches in thickness, and averaging about an inch) of a bluish-drab colour, interstratified with lighter beds of a fine sandy character; the whole having a conspicuously banded appearance. The bedding is usually horizontal, but occasionally it is tilted or contorted. Layers of cemented gravel were sometimes met with. The clay is highly calcareous; Dr. Hunt finds the various samples collected in different parts to contain on an average upwards of thirty per cent. of carbonate of lime. The gravel and coarse sand consist, to a great extent, of the *debris* of limestone rocks, apparently derived from the calcareous strata north of the water-shed. These deposits appear to be of fresh-water origin. On the east side of the river, at a point about nine miles below Herrick's line, in a bed of bluish-gray sand, underlaid by clay, and overlaid by fine yellowish sand (at a height of thirty feet above the river, and thirty feet below the top of the bank), I found two species of the genus Unio, one of Anodonto and one of Margaritana; together with species of Muoca, Planorbis, Valvata and Amnicola; the whole being of a more southern type than the mollusca at present inhabitating the rivers and lakes of the neighborhood. All the way from the mouth to the first portage, a distance of forty-four miles in a straight line, or sixty-three following the stream, the river flows swiftly, with a smooth gliding current, which greatly impedes the upward progress of canoes, especially when the water is high. A few slight rapids, mostly over boulders, also occur, and in going up it is necessary to "track" loaded canoes past some of these with tow-lines. In this distance, steep banks of clay and sand rise, on alternate sides, to heights varying from thirty to 150 feet. Owing to the undermining action of the water, the banks in many places have given way, and precipitated great masses of the clay into the bed of the river, blocking up the stream and forcing it to excavate for itself new chonnels. These land-slides are occasionally upwards of an acre in extent. Below the first portage, the river averages about five feet in depth at low water, and from ten to fifteen when the water is high. The trees all along the banks are marked by the ice shove, at a height of from twelve to fifteen feet above the summer level, and the river-silt is deposited on the bark and moss of their trunks in places as high as twenty-five feet over the same level. During low water the banks are very steep and muddy, and thickly covered with brush, so that it is difficult to find good landing places for canoes."

FROM LONG LAKE HOUSE TO ENGLISH RIVER POST.

July 18th.—As anticipated, I found it impossible to obtain a suitable guide at Long Lake, although Stephen White, who was temporarily in charge of the Post during Mr. Godchere's absence, did all that was in his power to assist us. Finally, he concluded to accompany us as far as a lake on our route, where it was expected an Indian would be found who might be induced to go with us. This lake was reported to be about twenty-five miles from Long Lake House. Two youths of about 19 and 15 years of age also went with us, as a last resource, should we be unable to find the Indian referred to.

Starting in the afternoon, about half an hour's paddling on a north-easterly course, brought us to what we may assume to be the end of Long Lake, but for the next hour we passed through a great marsh, on courses varying from east to north; it is difficult to decide whether this marsh belongs to the lake or river. We now enter, however, what is plainly the Kenogami or English river, the outlet of Long Lake, and a tributary of the Albany. In size, it is here a stream of about two chains in width. Ten minutes more and we came to the first portage, about 350 yards in length, with a fall in the rapids estimated by Dr. Bell at twenty feet.

Leaving this portage, forty minutes' brisk paddling brought us to the junction (from the west) of Little Long Lake river, which is seemingly nearly as large as the Kenogami itself. In twenty minutes more our river was joined by another good-sized stream also from the west, called the Manitou-namaig, or Devil-fish river. Half an hour after we had passed this junction we came to the second portage. The fall here is only seven feet, and the length of the portage 150 yards. The first portage is on the west, and the second portage is on the east side of the river. Here we camped for the night. This point is, I consider, about ten miles from the Hudson Bay Company's Post on Long Lake, following the windings of the river. The country is low and flat, and there is a very extensive marsh between the Post and the first rapid. This might be converted into meadows at a small expense, and will be valuable for that purpose some day or other. The size and condition of the few cattle kept at the Hudson Bay Company's Post, leaves no room for doubt as to the fitness of both soil and climate for the raising and keeping of cattle. The ox whose dimensions were given a few pages back is a sufficient proof of this, and with an unbroken stretch of water, navigable for steamers from this point to the south end of Long Lake, not more than twenty-two miles from the Canadian Pacific Railway, and the same distance from Lake Superior, offering competitive or alternative means of transport to eastern markets, I cannot admit that I am at all visionary in believing as I do, that this country, barren as the soil, and inclement as the climate may appear to many, will undoubtedly be reclaimed, and settled at no distant day. The population may not be dense, but when we consider the immense extent of this Height of Land plateau, and that it possesses a soil as well if not better adapted for pastoral pursuits than most parts of the Highlands of Scotland, it may become of very much greater importance than we imagine, more so, indeed, than some of our richer but at the same time much smaller home districts.

Dr. Bell ascended and explored the lakes drained by the Manitounamaig, which, as just mentioned, joins the Kenogami some two miles above this portage. He reports as follows in reference to the country lying to the north-west of Long Lake House: Report of progress of the Geological Survey, 1870-71, p. 341, *et seq.*

THE COUNTRY NORTH-WEST OF LONG LAKE HOUSE.

"The Manitou-namaig river enters the Kenogami river at six miles in a straight line from the outlet of Long Lake. Canoe navigation is interrupted by a rapid close to the mouth, around which there is a portage, on the north side, of twenty-six chains. The upward course of the river is north 57° west (Mag.), four miles to the lake of the same name, the river in this distance being broken by a few rapids, with boulders, which, however, do not necessitate portages. This lake has the form of the letter "L" reversed. The lower portion, which is about six miles in length, with a breadth varying from three to 110 chains, runs north-west; while the upper portion, which is said to be over twelve miles long, runs south-west, and varies from twenty to about 100 chains in width. The upward continuation of the river leaves the northern extremity of the lake at the angle formed by the two stretches described. Following this, through a sluggish stream, at the end of half a mile we come to Round Lake, about two miles long. The course of the river above Round Lake is about west, for five and a-half miles; entering Arm Lake, one mile in diameter, at the distance of about a mile from Round Lake, and terminating in a shallow lagoon, half a mile wide, above which the main river turns south-westward, and was not explored any further. The above stretch consists of dead water, with the exception of a slight chute a short distance above Arm Lake, but this is passed without portaging. A very crooked stream, called Mink Brook, enters the river half a mile below the lagoon. Following up this, at about two and a quarter miles in a straight line, we came to Muddy Lake, which is two and a half miles long, and one mile wide. Only one slight chute occurs in the course of Mink Brook, and even here a portage is unnecessary. At a bay on the west side of Muddy Lake a portage three quarters of a mile long, runs south-westward to Springwater Lake. From the northern extremity of Muddy Lake a still-water brook, half a mile long, led us to a pond called Head Lake. From Head Lake a portage-trail runs north-westward a mile and a quarter, mostly over swampy ground, to the lower part of Fleming's Lake, on the Ka-wa-kash-ka-ga-ma river, another branch of the Albany. Fleming's Lake (so named after the chief engineer of the Intercolonial railway) runs N.E. and S.W., and is five and a half miles long, by one mile and a half wide, with the exception of a narrow part in the middle. The outlet at the north-east extremity breaks through a ridge of boulders, producing a rapid, but below this the river is smooth to Ka-wa-kash-ka-ga-ma Lake which lies about a mile and a half to the north, and is three miles long by two wide. The river discharges from the north-west angle of this lake and flows smoothly in a westward course for a considerable distance. At two mile below the lake a portage trail three quarters of a mile long, runs from the river northward to a beautiful sheet of water called Wa-wong Lake; which discharges into it by a small brook, in the same neighbourhood. Wa-wong Lake is of a very irregular form, but its general outline will probably measure six miles from east to west, by three from north to south. According to the sketch-maps, and descriptions which we received from the Indians, the Ka-wa-kash-ka-ga-ma river, after flowing a considerable distance westward, turns northward, passing through two lakes, and finally runs eastward to the Kenogami. This great bend in the river sweeps round Os-kan-a-ga or Bare-Bones Lake, which is said to be one day's journey by canoe (or about twenty-five miles) in length. Below the lakes just mentioned the river is called Pe-geon-a-kai-geon, after the lowermost of the two lakes, This route is sometimes used by the Indians in coming from the Albany to Long Lake House, the amount of portaging being less than in following the Kenogami river the whole distance. A few miles below the trail to Wa-wong Lake, a branch, which the Indians follow going to Lake Nipigon, is said to enter the Ka-wa-kash-ka-ga-ma river from the southward. The upward continuation of the river is found at the south-western extremity of Fleming's Lake. Spring-water Lake lies about a mile and a half south of this part of the river, into which it discharges by a small stream, and measures three and a half miles in length, in a north-easterly direction. Six other lakes, connected with the same water, are found at short distances south-west of Fleming's Lake. One of these is over three and another over two miles in length. Following up the main river, at about nine miles in a straight line south-west of Fleming's Lake, we enter Mountain Lake, which has the same general bearings, and is three and a half miles in length. A rapid, about a mile above Mountain Lake, interrupts canoe navigation for the first time in the thirty-one miles of this river and its chain of lakes which we examined; while below the point reached by us, opposite Wa-wong Lake, the Indians informed us that no portage occurred for a long distance. The whole country explored in connection with the Manitou-namaig and Ka-wa-kash-ka-ga-ma river, is comparatively level. Here and there a gneissoid hill is seen rising one or two hundred feet above the general surface. The most remakable is Granite Mountain, on the south side of Mountain Lake, which is composed of granite or massive gneiss, and has an elevation of about two hundred feet over the lake. This region is overspread with a fine yellowish sand, beneath which a considerable thickness of gravel is found in some places, and, underlying all, a light-coloured clay is ocasionally seen. The sand and gravel are largely developed around Wa-wong and Fleming's Lakes, whose banks are from fifty to one hundred and fifty feet in height, the shores consisting of smooth, curving sandy beaches. Back from these lakes the surface of the country is rolling, and the soil generally of a light, sandy and gravelly character. The wood consists of white birch, aspen, tamarac, spruce, balsam, fir, white cedar and the banksian pine, or "cypress," many of the trees being large enough to be of value for timber. A country similar to the one just described is reported to extend in the neighbourhood of the Height of Land westward to Lake Nipigon, and eastward to New Brunswick House, on Moose river. As illustrating the general level nature of a portion of this region, I may refer to the fact that we did not find it necessary to make a single portage in going all the way from the English river to Head Lake, except the short one already mentioned at the mouth of the Manitou-namaig river; while the outline of the country on either side of this river and the lakes was usually low and level. As already stated, no portage occurs along the Ka-wa-kash-ka-ga-ma river in the part examined (about thirty-one miles), or for some distance further down. The rocks met with in the country explored north-west of Long Lake House consists of Laurentian gneiss, with some black mica-schists. The general strike is west south-westerly, the same as throughout the extensive regions already referred to."

A country such as Dr. Bell describes—well watered and well timbered, with few hills or ridges of rock, cannot fail to be a good grazing country. Nor will there doubtless be wanting numerous tracts of land sufficiently fertile to produce abundant crops of such grains and roots as the climate favours.

July 19th.—Started at five a.m., at which time the barometer stood at 29.15 inches.

A quarter of a mile from this second portage brought us to a strong rapid with an island on the right. Hornblendic gneiss is seen here, intersected by granitic veins;

river four chains in width; country flat and low-lying on both sides; timber chiefly spruce and tamarac. At 5.30 rapids again, which we ran. About this point, the course of the river hitherto northerly, turns eastward, and at 5.50 a.m., or say in about three miles from camp, we came to the third portage. This is on the left bank, and 240 yards in length. The fall in the rapids is twenty-two feet, according to Dr. Bell's measurements.

The highest of the falls, and even the length of the portages, often vary with the state of the water, whether it be high or low. The estimates, therefore, of two parties passing over the same route at different seasons will occasionally be found to disagree on these points.

At the lower end of this portage I noticed several pieces of fossiliferous limestone, similar to those met with elsewhere in the Height of Land. Having crossed the portage, and stopped to take breakfast, it was eight a.m. when we again resumed our journey. The river is now three to four chains in width, and pursues a course varying little from E.N.E. in long straight stretches. Some small black ash and bush maple now appear, mixed with the more common woods. The rock is Laurentian gneiss, and dips northward. About three-quarters of a mile below this portage a stream falls in on the left, and a little lower down another on the right. A short distance below this we meet with a rock ridge or bluff forty feet in height, with seemingly good land on the left. Stopped to examine, and found the soil to be a rather light sandy loam. In another mile we have a strong current in the river, with frequent rapids. About three miles from last portage a good large stream falls in on the left side. This is called Kaw-wah-que-ne-qua. The water of this stream is much clearer than that of the Kenogami river. A little lower, and we come to a rapid and the fourth portage. This is distant about three and a half miles from the last or third portage. It is on the right hand side, some 200 yards in length, with a fall of twenty-five feet according to Dr. Bell's measurement, which is, however, more than was indicated by my instrument.

Starting at 9.33 a.m., five minutes brought us to the fifth portage, on the left, over a rock some twenty yards only in length, with a fall seemingly not more than five feet. In eight minutes from the time we got away from this portage we came to the next or sixth portage. This is only a demi-charge, the portage being some 150 yards in length, and fall, say about four feet. Starting again at 10.12 a.m., a small stream falls in on the right. On this, the south-eastern side of the river, the country has been burnt over and is level or rolling with a light sandy soil. Stephen White, who has traversed it on foot, informs me, that this is the character of the land for a long distance in an easterly and south-easterly direction. Eighteen minutes, in which we probably made about a mile, brought us to the seventh portage. This is on the right hand side, nearly half a mile in length, and the fall, according to Dr. Bell, is twenty-four feet, which, however, is considerably less than that indicated by my barometer. Timber here all destroyed by fire. The soil appears to be a light clay loam. Black ash grows on a small island opposite the lower end of this portage.

Having stopped to take dinner here, it was about two p.m. when we once more got under way. Pursuing an easterly course we soon entered a good-sized lake, called, as nearly as I could make out, Minniquagaming, but which on my return, and with Dr. Bell's report before me, I find should be spelt Mani-gwa-ga-mi, or Pine Lake. It is upwards of ten miles in length, and from half a mile to two miles in breadth. The bearing of the longer axis is about N.N.E. Here Stephen White expected to find the family of the Indian who was to guide us to English River Post. We accordingly spent the remainder of the day in exploring the lake, and at the same time looking for this family. Our search was unsuccessful, and we finally camped on the west side of the lake some four miles north of where the river enters it.

I saw some tracts of good arable land on this lake, more particularly on the west side, a little north of the river. On going back here I was pleased to find a seemingly excellent tract of land. It is elevated above the lake at least forty feet, gently undulating, with a light clay loam soil, which looked to me capable of growing excellent wheat or anything else that the climate will bring to maturity. Fire had burnt off most of the timber, but some of the aspens that had escaped measured five feet in circumference. The gravel on the beaches is largely composed of bits of fossiliferous limestone, and there is, no doubt, a good percentage of lime in the soil. I am favourably impressed with the fertility of the country in the vicinity of this lake.

The prevailing timber all round this lake is aspen, with a few patches here and there of spruce and tamarac. The ridges bounding the lake do not attain a greater elevation than 100 feet. Banks of clay and sand of forty or fifty feet in height were conspicuous at several points on both sides of the lake. The rock is for the most part Laurentian, and I did not observe minerals of any economic value. Indeed, there are comparatively few places where the rock is uncovered or exposed to view.

July 20th.—Barmometer 28.9, and threatening rain. As, notwithstanding the smoke of our fire, and the firing-off of several shots, there was no appearance of the Indians of whom we were in search, we started about 8 a.m., Stephen White having agreed to go with us as far as another lake where he still entertained some slight hopes of finding the family. Crossing the lake we entered a channel on the east side, which soon opened out into another lake some three or four miles long and about half a mile wide, the longer axis bearing about N.E. and S.W. Our search on this lake was also fruitless; no Indians were there. White's explanation was that the family had probably gone off somewhere to gather birch-bark for repairing and building canoes, a supply of which is usually laid in at this season.

The soil, the timber, and the rock are the same as those found on the adjacent Manigwa-gami Lake. Leaving this lake, we proceeded on in a northerly and easterly direction down what at first seemed an arm of the lake, but which proved to be the Kenogami river, and in about two miles we came to the eighth portage. This is on the right, and only about eighty yards in length. The fall in the rapid is not more than three or four feet. A short distance below this rapid, on an easterly course, we enter Arm Lake, about four miles long in a north and south direction, and half a mile wide. This also, we searched in vain, and, not a little disappointed, landed for dinner on the east side nearly opposite where we had entered the lake. This place is a mile and a-half from the last portage, and not far from where the river again leaves the lake.

Here Stephen White was obliged to leave us and return to his post. Our only alternative was to return ourselves, or go on and trust to the guidance of the two young lads we had brought with us from Long Lake. My voyageurs did not seem to like the idea very much, having heard that there were many dangerous rapids to be run before we could reach English River Post. I was glad, however, to find that whatever misgivings they, in common with myself, might have had, no objection or complaint was made by any of them. At quarter to two o'clock, therefore, we once more resumed our journey northward, White returning to Long Lake in a small canoe which had been brought with us for that purpose.

A little over three miles in a N.E. and E.N.E, direction brought us to the ninth portage. This was preceded by several strong rapids which our youthful guides ran with such good judgment and skill as considerably increased our confidence and raised our spirits. This portage is on the right, about half a mile in length, with a fall, as estimated by me, of about fifteen feet, We camped at the lower end of this portage. The soil at the lower end of the portage is sandy, reposing, however, on clay. About half of the portage is over a muskeg.

July 21st.—Soon after we had started this morning we entered a lake now small, but which I would judge to have been at some former time much more extensive. What we see of the lake is not more than half a mile one way by quarter of a mile the other. Dr. Bell, however, found it to be two miles in length and to contain several small islands. It is the occurence of these islands which probably prevented my seeing the full size and extent of the lake. It is called Kapeesa-wa-tan, and receives, according to Dr. Bell, a considerable stream from the south, called Manigwa-ga-mi-shish, or Little Pine river, so called from a lake of that name in which it has its source. The country here seems low and flat, the soil where seen is rather light and sandy, and timber small, and so continues most of the way to the next or tenth portage, some six miles from the last. Two miles below the lake above mentioned, the Kenogami receives a stream from the south called Wa-big-a-no or Mouse river, and on the same side, but a mile lower down, another smaller stream.

The tenth portage is on the right bank about 140 yards in length, with a fall in the rapid of twelve feet.

Starting again at 10.40 a.m., we pass two or three small islands, and in about three quarters of a mile come to the eleventh or Long Portage. Our course so far this morning, although variable, has been on the whole eastward. The rock, where exposed in this stretch, is still chiefly Laurentian gneiss.

The eleventh portage is on the right side, and about one and a half miles in length. The fall here, according to Dr. Bell's measurement is seventy-five feet. To my surprise, this rapid was run by Nolin, Sanson, and the two Indian boys in the canoe, which although light, was a rash and dangerous undertaking as it seemed to me, and one which I think they would hardly venture to attempt again. They got down, however, with nothing worse than a good wetting and some little damage to the canoe. The portage passes over a ridge covered with, if not composed of, drift sand, gravel and clay, abounding with pieces of fossiliferous limestone, one of those I noticed at the lower end, being at least twenty-five pounds in weight. It was half-past four before all our baggage and supplies were got over, and we were ready to resume our journey.

The land, though not first-class, is fairly fertile, and will afford excellent pasture.

The distance between the eleventh and twelfth portages is about two and a half miles, in which stretch there are several strong rapids and a number of islands. A brook falls in on the left side a little below the foot of the rapids at the eleventh portage, and another small stream about half a mile lower down on the same side. There is good land on both sides of the river in this stretch. The timber is chiefly aspen and spruce. The rock, where seen, is Laurentian, gneiss, syenite or granite. The twelfth portage is quite short, say twenty yards, with a fall of five feet in the rapids, which were run by the canoe with some of our things. The thirteenth portage is only a few chains below the last. The portage is situated on the right hand side, seventy-five yards in length, with a fall in the rapid of ten feet. The barometer, the height of which was 29.10 when we started this morning, stands at 29 here on this portage, some atmospheric change more than counteracting the difference due to the lower elevation, which would otherwise have occasioned a rise instead of a fall of one-tenth of an inch in the height of the barometer. Following the bends of the river, I roughly estimated the distance from Long Lake House to this portage at about forty-five miles. Our course since leaving the eleventh portage has averaged about N.E. We camped here for the night.

July 22nd.—This being Sunday, we remained in camp. Barometer this morning 29.2, and in the evening 29.3.

July 23rd.—Barometer 29.5.

Started at 5.40 a.m., and soon came to strong rapids which were safely run. Fair land below this rapid on the left. A little lower down, or three-quarters of a mile from camp, a brook enters on the left, with good land on both sides of the main river ; river three to five chains in width ; several small rapids and an island bring us to the fourteenth portage, distant about a mile and a half from the last ; general bearing about north-east. This portage is on the right hand side, and about 275 yards in length. The fall in the rapids is fifteen feet. I noticed spruce trees on this portage from six to seven feet in circumference. Rock, syenite.

Crossing this portage we got under way again, and quarter of an hour thereafter, arrived at the next or fifteenth portage. The bearing of this stretch is also north-east. The land low and flat. Rock, syenite. The fall here is six feet. The portage is on the left and about 100 yards in length. Timber mostly a second growth, and small. In ten minutes after leaving this we were once more obliged to make a portage, the sixteenth from Long Lake. This is on the right hand side, about 600 yards in length, and descends twenty feet.

The soil on this stretch is light and sandy, and supports a young growth of banksian pine.

We started from the sixteenth portage at 9.58 a.m., and at 11.23 came to the seventeenth portage. The general bearing is still north-easterly. In the course of this stretch, which is four and a half miles in length, the character and appearance of the river, the country, and the rock, are all perceptibly changing. The river is becoming broader and shallower. Perpendicular banks of greater or less height, and composed of drift clays, gravel and sand begin to appear on one side or the other. The drift is full of pieces of fossiliferous limestone, and the beaches strewn with the same. The banks referred to vary from ten feet to forty or fifty feet in height. We begin to meet with land slides, the first seen since we left Pic river. The Laurentian rock is more rarely met with, and then only on islands or in the low reefs crossing the river, altogether it becomes evident that we are now approaching the vast region lying south of James' Bay, which is underlaid by the flat-lying Silurian and Devonian rocks. The timber consists of spruce and tamarac on the swampy, and aspen on the dryer ground. The seventeenth portage is on the left side, and about seventy-five yards in length. The descent in the rapids is six feet. About half way between the sixteenth and seventeenth portages, a large tributary called the Atick, or Deer river, enters on the left or north-west side.

Leaving this portage we came in about quarter of a mile to the eighteenth and *last* portage on this river. It is on the right hand side. The length of the portage is only two chains, and the fall in the rapid is four feet. The rock here is a light-coloured gneiss.

From Long Lake House, which is situated at the northern extremity of Long Lake, to this portage is, following the bends of the river, by my own rough calculation, about fifty-four miles. The distance in a straight line from the first portage below Long Lake to this point is probably not more than forty miles. From this to Albany factory, some 240 or 250 miles, the navigation is said to be unimpeded by falls or impassable rapids.

We set out from this point just about noon—my crew not a little elated at the prospect of being relieved from the severe labour entailed on them by long and numerous portages. The course of the river, which has been north-east for some distance above the last portage, becomes now east north-east. About two miles below the last portage we stopped on the left hand or north-west side, and while dinner was cooking I went back to examine the land. The bank here, 40 feet in height, is composed of drift-clay, gravel and sand, without appearance of stratification, and encloses numerous pieces of limestone. On the top the country is level, and the land, as far as I went, seemingly good, bearing, as it does here, a fine, healthy growth of timber. I measured spruce that were six feet; birch and poplar, four and a half feet; balsam, four feet, and tamarac four feet in circumference. The soil seemed to be between a sandy and a clay loam. About eight miles below the portage we came to the confluence of a large stream from the south, called the Pe-wa-na-go, or Flint river. The land on both sides appears to be generally good. The timber consists chiefly of aspen, not very large, but seemingly healthy. I have no doubt that the country is underlaid by limestone and other stratified rocks, commencing a very short distance below the last or eighteenth portage, if not actually above it. Five miles below this portage we could plainly feel the flat rock with our poles in the bed of the river, and, although buried out of sight on the beaches, I was convinced from the numerous large angular pieces of limestone, shale and sandstone visible on the banks, that we had arrived at the outcrop of these beds several miles above that point, or even between the sixteenth and seventeenth portages. The Kenogami river above Flint river is from four to five chains in width with a rather strong current, and frequent ripples or small rapids.

Below the Flint river islands become more numerous, and the river itself wider and shallower, being in some places as much as quarter of a mile nearly in width, and here the land appears to be low and wet, if not swampy. It is not improbable that this has been a shallow lake, now partially, but not completely drained. About two and a half or three miles below the junction of Flint river, another good-sized stream called Wateskte-kooma, falls in on the opposite or north side. This is, I presume, the river mentioned by Dr. Bell, and called "Watistiqum." Passing this, and continuing our downward course for seven or eight miles, we camped on the north side. This point is probably about twenty miles from the portage, and not far from the island called Pembina Island, in Dr. Bell's reports. I unfortunately lost most of the geological reports relating to this section of the country in the fire on board the steamer Manitoulin last year. This, together with my inability to procure an experienced guide, acquainted, not only with the river we have been descending, but the surrounding country, have been great drawbacks and prevented my obtaining as full and complete information on many subjects and points as I could have wished. The land near the river for the greater part of the last stretch is low, presenting again to my mind the appearance of a recently (in a geological sense) drained lake. No doubt higher banks, rising to the general level of the plain, surround this lake basin, but these are not seen from the river, or at least only now and then. At our camping place these banks approach the river and are some thirty-five feet in height, rising at once nearly to the level of the plain above. I cannot better convey an idea of the character of the material composing these banks, and, as I believe, much of the soil of the adjoining country, than by describing it as the "unsorted" drift of the Glacial Epoch. It consists of clay, sand, gravel and stones of all the rocks I have met with to the north or north-east, and of many that I have not met with "in situ," but which have no doubt been transported from points still further north than I have yet been. These materials are not stratified or arranged with any regard, that I can perceive, to their size, shape, specific gravity, or chemical composition, but are mixed together promiscuously, and spread to a greater or less thickness over thousands of square miles of this territory. This great drift formation extends in a wide belt from the Atlantic to the Pacific Ocean. Indeed it is not confined to our North American continent, but is spread in a like manner, I believe, over the northern parts of Asia and Europe. It may differ in composition, according to the nature of the rocks (always lying to the north) which have furnished the material, but its character otherwise, when *undisturbed*, is very much the same, whether it be met with in Scotland, where it is commonly called "till," or in this territory, where it is exposed to view, if not on the surface, at all events in the banks of the rivers. I am well aware that the so-called "till" in Scotland is not a fertile soil, but this is owing to its mineral character or chemical composition, and generally, I think, to a deficiency of lime. In consequence, however, of the widespread distribution of limestone on James' and Hudson's Bay, to the north, there is no deficiency of lime in the drift soils found between our great lakes and James' Bay. On the contrary they generally abound with calcareous matter—many of the clays being, as I have frequently observed, really marls —containing twenty per cent. and upwards of lime. So far as the inorganic matter is concerned, I believe this drift contains all that is necessary to form a good soil. When clay greatly predominates, as it often does in this drift, it is too retentive of moisture, especially where the surface is flat and undrained. Hence it is that while we often meet with a strip of good land, carrying a healthy growth of aspen, spruce and birch, extending along the banks of the rivers and water-courses, which afford a certain degree of natural drainage, yet at a short distance farther back from the stream, without any change in the formation or soil, the land becomes wet, covered with a growth of bog-moss (Sphagnum), and finally with a greater or less depth of peat, or, in the language of the country, it becomes "a muskeg." I have frequently noticed that this "drift" when forming the banks of rivers or found, as it sometimes is, in ridges, is much less tenacious, or clayey so to speak, at or near the top of such banks or ridges than elsewhere. I am inclined to attribute this to the percolation of water (rain or melting snows), which in the course of time has removed a portion of the finer clay in the drift, leaving in such situations a larger proportion of sand, and converting the soil into a sandy loam.

July 24th.—Started at 5.50 a.m., and in the first hour passed several islands, one of which was, I have no doubt, Pembina Island, alluded to in Dr. Bell's Report. The timber is small, in consequence of fire having passed over the country not many years ago. A second growth of healthy young aspen is now springing up. The banks have become more regular, and are higher on both sides of the river. They have also changed their colour. This is owing to the appearance in the face of the banks of reddish, mottled, indurated marls, shales and calcareous sandstone, associated with the stratified limestones. I at once recognized these as almost identical with the rocks met with two years ago on the Albany river, a short distance above the Forks, or junction of this river and the Albany. At the end of three hours and a-half smart paddling, with a tolerable strong current, we reached the mouth of a large tributary on the right or south side, two and a-half or three chains in width. This is Bagutchewan, or Shallow-water river. It is said by my young guides to come from a very large lake of the same name. This may possibly be the Powgutchewan, which lies about eight miles N.E. of McKay's lake, the source of Pic river. The variegated and mottled brownish and greenish marls, slates and sandstones continue to be the most striking geological feature presented in the banks of the river. The land near the river and its tributaries is generally good, but becomes wet, and finally ends in muskeg as we go back from the river. The general bearing of this stretch of the river, the length of which may be about fifteen miles, is between north-east and east-north-east.

Leaving the Bagutchewan, as Dr. Bell calls it, but which is Pa-yaw-koo-ge-wong in my notes, we came in about four miles to a little stream ten yards wide on the same side, where the red slaty marls and calcareous sandstones are exposed in the bank, and afforded me some good specimens. Leaving this at 2 p.m., we once more pursued our way down the river, which at this point is about six chains in width.

At the mouth of the little stream last mentioned, I went back to examine the land. I found the bank at that place nearly 100 feet in height. On arriving at the top, the plain, as usual, was quite level. The soil was a clay loam; and near the river where moderately dry, the timber was healthy and thriving. Not more than a quarter of a mile from the river, however, it had become completely covered with sphagnum moss, and, indeed, with a considerable depth of peat. This rapid falling off, or deterioration, is not due to any change in the soil, but simply want of drainage. The plateau is, as I have just stated, 100 feet nearly above the river, and does not fall away, but rather rises as we advance southwards from the river; but the soil is retentive and the country level, hence there is no natural drainage, unless it be on the immediate banks of the river. Four hours after we left this point, or at 6 p.m., we arrived at the Hudson's Bay Company's Post, known as English River Post. As we had the advantage of a pretty strong current in our favour, it is probable that we made from four to four and a-half miles an hour, and that the distance from Bagutchewan river to this point is, as estimated by Dr. Bell, about twenty-three miles by the river, or twenty-one miles in a straight line. The bearing of this stretch is north-east, or more accurately as determined by Dr. Bell, N. 50 E. From the brook where we took dinner, some four or five miles below the Bagutchewan river to near the H. B. Co.'s Post, the land adjacent to the banks of the Kenogami has every appearance of being suchas that last described. About four miles, however, above the Post, river bottoms of alluvial soil, and islands possessed of a like rich soil, were met with, and on these I observed fine healthy trees of black ash and elm. These elm trees are the first I have met with on this trip. About a mile above the Post the Kenogami receives a large tributary from the south called the Na-gau-gaming river, and another from the east called the White-water river just above the Company's Post. This is the place called Mamattawa in Dr. Bell's Report, and in reference to which he says, "Mamattawa is a contraction from an Indian word signifying 'the coming together of many branches,' and refers to the fact that two large tributaries here join the main stream from the east, and both of these again receive branches near their mouths. The Hudson's Bay Company had a post at this locality many years ago, but it is now re-established under the name of New Post, further down the river, at a distance of thirty miles from the Forks." Since the date of Dr. Bell's survey, however, in 1871, the Company has moved the Post back again to Mamattawan, and here we were kindly welcomed by Mr. Hunter, the officer in charge.

The following table of distances and of levels taken from Dr. Bell's Report may not be uninteresting or out of place here. Dr. Bell's barometric observations were conducted with two aneroid barometers, and compared with daily readings recorded, at his request, by Messrs. Ironside and Finlayson at Pic and Long Lake; and his calculations of distances, not only from long experience, but the use of the most perfect instruments, necessarily yield results more accurate and reliable than my own hurried and approximate estimate, and have generally been adopted in this report where the opportunity has been afforded.

PORTAGES ON ENGLISH (KENOGAMI) RIVER, COUNTING FROM LONG LAKE DOWNWARD.

No. of Portage.	Side of River.	Approximate length, in chains.	Fall in River, in feet.	REMARKS.
I.	Left.	14	20	Trail level and dry. Carry Canoes,
II.	Left.	5	7	Do. do. Wade light canoes.
III.	Left.	12	22	Banks of gravelly earth. Carry canoes.
IV.	Right.	9	25	Burnt land. Sandy trail. Wade light canoes.
V.	Left.	6	12	Run light canoes.
VI.	Left.	3	4	Do.
VII.	Right.	34	24	Steep bank at lower end. Carry canoes.
VIII.	Right.	4	3	Run light canoes.
IX.	Right.	2	10	Over rocks. Carry canoes.
X.	Left.	6	12	Lower end steep and rocky. Carry canoes.
XI.	Right.	120	75	Trail level, but intersected by a few small ravines. Steep bank near lower end. Soil yellow clay, overlaid by gravelly loam. Carry canoes.
XII.	Left.	1	7	Over rock. Carry canoes.
XIII.	Right.	5	10	Do. do.
XIV.	Right.	12	15	Level trail. Run light canoes.
XV.	Left.	5	6	Do. Carry canoes.
XVI.	Right.	25	20	Do. Wade full canoes.
XVII.	Left.	4	6	Do. Wade light canoes.
XVIII.	Right.	1	4	Run full canoes down. Wade up.

DISTANCE FROM LONG LAKE TO ENGLISH RIVER POST, OR MAMATTAWA, BY THE KENOGAMI OR ENGLISH RIVER.

From Long Lake to the 18th or last portage	70 miles.*
From the 18th or last portage to Pembina Island	21 ,,
From Bembina Island to the mouth of the Bagutchewan River	16 ,,
From Bagutchewan River to Mamattawa or English River Post	23 ,,
	130 miles.

LEVELS ABOVE THE SEA.

Lake Superior	600 feet.
Long Lake	1066 ,,
Pine Lake, on Kenogami River	944 ,,
Pembina Island, do.	480 ,,
Mamattawa, English River Post	400 ,,

* I think that there is some error in this distance, for my own estimate is only fifty-four miles. Nor does seventy miles agree with the particulars or details of the lengths of the different stretches as given by Dr. Bell. My impression is that Dr. Bell's estimate of seventy miles includes the second stretch of twenty-one miles, or from eighteenth portage to Pembina Island.—E. B. B.

July 25.—This is a small Post in the Albany District. Its chief use is that of a depôt whereat the Indians may be able to obtain in winter such few absolutely indispensable articles as they may require, and of which they may have run short. With the exception of some half-dozen families, the hunters go to Albany Factory as soon as the rivers open in the spring to trade their furs and procure another outfit as it is called. The supplies for this Post are sent up from Albany in boats, which carry from three to five tons each.

The establishment consists of two small but substantial dwelling houses, a store or trading-shop, and root-house. They are separated from each other by a space sufficient to prevent the spread of fire. The danger of fires, particularly bush fires, seems never to be forgotten or overlooked by the Hudson's Bay Company's officers in locating their Posts. In order to secure themselves and the Company's property against destruction, islands or peninsulas are very often selected whereon to establish their Posts. Soil is a consideration of less importance than security from bush fires. Another danger to be guarded against is that arising from high floods, more especially the spring freshets, when, owing to the rapid thawing of the snow which has accumulated during the long winter, the rivers are taxed to their fullest capacity, to carry off the sudden and enormous influx of water, from the vast areas which many of them drain. The country drained by the Kenogami and its numerous tributaries above this Post, cannot be less than five thousand square miles. This Post is situated on a peninsula formed by the Kenogami river on one side and White-water river, which falls into the Kenogami above the Post. The houses are some twenty-five or thirty feet, at least, above the summer level of the water in the river. On the top of this bank the land is level and of excellent quality. The soil is a sandy loam, rich in calcareous matter, and of alluvial origin. The only crop grown, or attempted to be grown, is the potato. These look remarkably well, although the season has been a backward and generally an unfavourable one. There is a striking contrast between the appearance of the crop here and that presented by the potatoes at Long Lake House, to the advantage of English River Post, making the largest allowance for the difference of dates when planted. Mr. Hunter says that the return is usually from fourteen to eighteen bushels from each bushel planted, and that he has never known it less than ten. No manure is applied, for no cattle are kept at this Post. He says that both soil and climate are better than at Moose Factory, where he lived for a number of years. He further says, that he never saw finer potatoes anywhere in respect of quality than those grown here.

When walking around the clearing, I was surprised to see a humming-bird hovering over some of the wild flowers. I did not think this pretty little stranger from the south extended its migrations so far north, or into such, in many parts, an uninviting territory; but I could not be mistaken, for it came a second time within a few feet of where I stood.

The young lads who have been our guides will set out on their return to Long Lake in the morning, and as there may be chances of forwarding letters, etc., from thence to Pic River Post, on Lake Superior, much of the day has been spent in packing and arranging specimens, a box of which I propose sending, and in writing letters to be taken by them as far as Long Lake House. These Indians have done much better than I expected, displaying, for their age, a remarkably good knowledge of the route. It may take them eight days to return, and they will be supplied with provisions to last that time.

July 26th.—Barometer 29.6.

The Nagaugaming branch of the Kenogami river, which falls in about a mile above this Post, is a fine stream, which, according to the Indians, has its source on the Height of Land in a lake lying to the south of this and north of Michipicoton River Post. Anxious to see something of the country in that direction, I engaged the chief, a man pretty well advanced in years, to be our guide, and leaving such things as were not likely to be needed in charge of Mr. Hunter, commenced the ascent of the river soon after ten o'clock. Half-an-hour's paddling against a strong current brought us to the junction. The alluvial soil is undoubtedly rich on the river bottom, supporting, as it does, a fine growth of elm, black ash, poplar and aspen, with some spruce and balsam. The willow grows very luxuriantly on the banks. Passing the junction, we left the Kenogami on our right. Our progress up the Nagaugaming, though impeded by no violent rapids or falls requiring portages to be made, was very slow, owing to the strength of the current, and the impossibility of using the tow-line. We had not made more than seven or eight miles, I think, when we had to camp for the night. The land on the banks of the river is generally good, but in many places liable to be flooded in the spring, when, according to the old chief, the water rises from fifteen to twenty feet above its present height.

Limestone is very plentiful in loose pieces, but has not yet been noticed "*in situ.*" Marine shells were found four miles above the forks, or five miles above the Post.

July 27th.—Barometer 29.5.

This river is about three chains in width. The banks in the rear of last night's camp rise to a height of thirty feet, and there is a fine, healthy growth of aspen for nearly half-a-mile in depth. It then deteriorates rapidly, and I soon came to the usual muskeg, with poor spruce and tamarac, not more than six inches in diameter. The peat was nearly three feet in thickness where I turned. Underlying the peat was a light grey or bluish clay.

The shallowness of the water and strength of the current again rendered our progress very slow. So much so that we did not make more than about eleven miles to-day.

The better land is confined to a narrow strip near the river. Some fair sized elm and ash are still seen, but not so fine as at or near the junction below. The sub-soil, as seen in the banks of the river, is clay, sometimes covered with a greater or less depth of sandy loam. Land slides are not unfrequent. The flat-lying rocks were met with about mid-day, and were frequently visible in the bottom of the river. Soon after dinner we came to the junction of a river called the Na-so-ha-ya, which is nearly forty yards wide. It joins the Nagaugaming on the right hand or western side. The latter stream, although as wide as before, is much shallower above this junction.

July 28th.—Barometer 29.4.

Soon after starting this morning, we came to a tributary on the left, about twenty yards in width. It is called the "Missigal." The great falling off in the quantity of water, accompanied by a great increase in the width of the Nagaugaming above this point, being not less in some places than eight chains, has rendered the river so shallow, that we continued our ascent with great difficulty until about 4 p.m., when it became necessary either to make portages or return. Satisfied that, in the present stage of the water, it would be impossible to ascend much farther in our large canoe, I concluded to return. The point thus attained, roughly estimated, is about twenty-eight miles above the junction of this river with the Kenogami. Our upward course has been, on the whole, southerly, or more properly S.S.W.

In the last stretch of the river the banks rarely rise to a greater height than thirty feet, and occasionally the land appears low and swampy. I have no doubt, however, that the general level of the country is thirty or forty feet at least above the bed of the river. The sub-soil, as usual, is a clay-marl, which sometimes approaches to and forms part of the surface, at others, is covered with a greater or less depth of sand, sandy loam or peat. Much of the sand and sandy loam, as well as gravel, seen above the clay in the banks of the river, has, in my opinion, been brought down and left there by the river itself during floods, and when its bed was more nearly on a level with that of the country than now. I am led to this belief by the circumstance that these superficial deposits of sand and gravel rarely extend far from the immediate banks of the rivers, nd that the muskegs or peat mosses so generally met with on penetrating inland, seem invariably to repose on clay. While a strip of good and well timbered land extends, as usual, along both sides of the river as far up as we ascended, in no instance, where examined, did it extend more than half a mile back from the river. The flat-lying limestone rocks reach further than the highest point attained by us. Beds of limestone, calcareous sandstone, and variegated clay marls, similar to those on the Kenogami river above the junction of this river, and also to those on the Albany river, above the junction of that river and the Kenogami, were met with in several places to-day. I was disappointed that we were unable to ascend the river to the outcrop of these stratified rocks, and the commencement of the Huronian and Laurentian rocks by which they are bounded on the south.

We now returned to, and again encamped on the same ground which we had occupied last night.

July 29th.—This is Sunday, but being somewhat short of provisions, and anxious to push on, we dropped quietly down the stream and reached the Hudson's Bay Company's Post in the evening. Range of barmometer to-day from 29.5 to 29.6.

July 30th.—I now concluded to ascend the White Water river, which comes from the eastward and enters the Kenogami or English river at this post.

I did not, however, owing to the shallowness of the water, expect to be able to go very far. Mr. Hunter was kind enough, not only to furnish me with a small canoe, but to accompany me himself. The White Water river is so called, in consequence of the colour of the water. Almost all the rivers on this, as on the other side the Height of Land, are more or less dark-coloured. This river and the Abittibi are among the exceptions, the water being muddy and light-coloured, owing to the presence of fine clay. It is about two chains in width. We had barely ascended two miles on a general course of E.N.E., when we arrived at where the river divides or forks. The stream on the left is called the Ship-pa.gach-tik, or Go-through river, that on the right retains the name of White Water river. We first of all ascended the Ship-pa-gach-tik, which is here about one and a-half chains wide. There is a route to Albany Factory from English River Post, which follows up this river, and passing through several lakes, strikes the Albany river a considerable distance below the junction or forks of the Kenogami and Albany rivers. It is shorter, I believe than the route *via* the Kenogami, but I suspect only practicable for small canoes. It offers advantages probably on the upward journey from Albany Factory to English River Post, as avoiding, to some extent, the strong currents of the Albany and English rivers. We only ascended this branch about two miles when we returned to the junction to continue our way up the White Water river. About four miles above this junction a small stream called Squirrel Creek joins on the left. This, too, we ascended for a short distance until we came to a small rapid whereat there was a fish-trap. These traps are very simple and probably of very ancient origin, and although illegal, their use should not be forbidden a people so hardly pressed to obtain food as the natives of this territory. It belonged to a widow whose husband had died and left her with four or five young children to support, a sad and sufficiently difficult task for a woman anywhere, but a terribly hopeless one (as it appears to me) in a country like this. It contained a goodly number of fish, known in the country as the grey sucker, red sucker, pickerel and bonzee, the latter resembling the sucker, but with larger scales, a deeper body, and red fins and tail. Returning to White Water river, we followed it up for about an hour, when finding that we could make little headway owing to the strength of the current, we gave it up and returned to the Post.

As might be expected, the land is better and in larger quantity around this post than in most other parts of the territory. I have over and over again called attention to the fact, that the comparatively small extent of arable land met with in this lower belt, is due to the flatness of the conntry and imperfect natural drainage. But, at this point, where so many large rivers unite, each of which acts as a drain to a limited distance on both sides, it is not difficult to understand that the land, much of which is alluvial, should be good.

The White Water river takes its rise, the Indians say, in a lake called Oban, a short dis-tance only from Dog Lake, which is the source of Michipicoten river. It can be descended without difficulty in the spring and early summer, but it is very hard to ascend it, owing to the strength and rapidity of the current.

FROM ENGLISH RIVER POST TO THE FORKS OF THE ALBANY.

July 31st.—Barometer 29.7.

Having determined on following the Kenogami to its junction with the Albany river, and arranged with two Indians to accompany us as guides, we bade Mr. Hunter and the few people at this isolated post farewell, and started.

This is a fine deep navigable river, and although we stopped repeatedly to make short excursions back to examine the land and the soil, we had made about forty miles, when we camped for the night. The river is very uniform in width, seemingly five or six chains. The course or bearing, too, is very straight, rarely deviating much from a northerly direction. In the whole distance of forty miles, it changes its course only forty times, giving a mile on an average for each stretch. On Pic river I was obliged to take as many observations or bearings in eight miles, and these, too, running oftentimes more than half round the compass; whereas the Kenogami makes no quick turns, each stretch being generally only a few degrees east or west of that which preceded it. The current, too, at this season of the year is very moderate as compared with Moose, Albany, Abittibi, or indeed any other river I have seen north of the Height of Land.

As regards the nature of the country through which this fine stream flows, I cannot convey a better idea than by simply quoting from the notes made from time to time as we went along, the numbers referring to the stretches. These, as already mentioned, amounted to forty in the course of the day, and as the distance travelled was about forty miles, we may, for convenience, consider each as representing a mile, our starting point being Mamattawa or English River Post.

1st and 2nd Stretches.—The land is such as I have already described that situated near the H. B. Co's Post to be.

3rd Stretch.—The banks are low, and muskeg is not far from the river at this point. The river itself is a fine stream five to six chains in width, deep, with a quiet, calm surface and moderate current. Although many feet lower, than in the spring or early summer, it has the appearance of being full to the brim. This arises from the circumstance that willows grow to the very edge almost of the water. First of all there is a narrow, low beach, then a sloping bank, rising to a height of from six to ten feet above the water, and covered with a luxuriant growth of grass and willows, and then a thick growth of spruce of inferior quality and size. This is all that can be seen from the river. But it is more than probable that this swamp, for it is properly such, is bounded at no great distance by another and higher bank, which rises to the general level of the vast plain through which the river flows.

6th Stretch.—Banks higher. Timber mixed and more healthy, indicating drier and better land.

9th Stretch.—A stream about fifteen yards in width falls in on the west side. A fine point of rather low land on the right; mixed timber, including some elm and black ash.

10th Stretch.—Land rather low, especially on the west side. Timber small, being a second growth of some twenty years' standing. On landing and going back, I was surprised to find that the bank rose twenty-five feet above the river, that the soil was a good sandy loam, dry, and free from bog-moss as far as I went.

11th Stretch.—Soon after we had resumed our journey, a stream about a chain wide discharges on the same, west side. This, and the main river, afford the land just referred to good natural drainage; the soil, too, is a sandy loam, instead of the clay so nearly universal. These circumstances, together with the comparatively recent fire, fully account for the absence here of the too prevalent sphagnum moss and peat. Some distance below the point last referred to, the muskeg seems to come right up to the bank of the river on the west side and apparently also on the other side.

16th Stretch.—Went back on the east side. A swamp full of dead, fallen and rotting timber, but slightly higher than the river. A couple of hundred yards back we thrust down a pole to find what depth there might be of peat or muck, and the character of the sub-soil. The pole could not be driven down more than two feet when it came to a hard bottom, but still neither sand nor clay could be observed on the point of the pole. At length John Sanson, rolling up his sleeves and making a hole, found it was *ice*. At another more open spot, we got the pole down three feet, and found that the sub-soil was clay. Immediately on the bank of the river the soil is sandy. As we descend, the beaches are becoming wider and less overgrown with willows, which are probably kept down by the rush of ice in the spring.

17th.—Tried the depth of the river, and found it to be eight feet, about the middle.

23rd Stretch.—Took dinner here, on the west side, and went back while it was cooking. The bank is nearly twenty feet in height, but the land became lower as we advanced. In a quarter of a mile we came to a swampy pond, which prevented our further advance in that direction. The soil, however, was pretty good, some spruce trees near the pond measuring from seven to eight feet in circumference, and high in proportion. Poplar, too, of large size had grown here, but were now dead and rotting on the ground. The floods must rise, or at least have risen, to a great height, for there are marks on the trees near the river, made by ice, at least twenty feet above the present level of the water. When thus flooded, many hundreds of square miles of low lying and swampy land on this river must have been submerged. General course N.N.E. The river continues wide and without violent rapids. The land appears lower on both sides for some distance, and the timber inferior.

25th Stretch.—The land becomes higher and drier, with a growth of fine, healthy aspen on the west side.

26th Stretch.—I went back on the west side and found large, healthy timber and fine land, which extends several miles, and it is equally good, in all probability on the east side.

28th Stretch.—Land lower, and timber apparently not so good, consisting almost entirely of spruce and tamarac.

30th Stretch.—Rock seemingly sandstone *in situ* on the east side; took specimens, but the bed is so near the water's edge and upon the same level, that it was impossible to get the dip or ascertain its thickness. Land apparently low and swampy on both sides. Went ashore on the east side some distance below the exposure of rock just mentioned. Intended to go back and examine. Ascended the bank and saw it was swampy, but was assailed by such a swarm of mosquitoes from a lately abandoned camp on the beach that we were compelled to beat a retreat and embark as quickly as possible. It would seem as if they had been attracted by the offal of fish and other garbage lying around the camp, in prodigious numbers from the adjacent swamp.

32nd Stretch.—A few years ago the Hudson Company's English River Post was here on the east side of the river. It was situated on a moderately high bank, barely high enough, however, to be safe from exceptionally heavy floods. Ice-jams do not occur, Mr. Hunter says, on this river. There was on the opposite or west side a clearing which had been cultivated. I stopped to examine it. It is called in the language of the country "A Garden," but potatoes were most likely the only crop grown. It is situated on a plateau thirty feet above the river. The soil is a good sandy loam of which I took a sample. Mr. Hunter told me that excellent crops of potatoes were grown here. There seems to be a large quantity of land of the same description and quality lying on the banks of this river. The river below this takes a westerly bend, and on the east side the bare sloping bank is full of limestone gravel and twenty-five feet in height. It is covered on the top with a dense second growth of aspen. A mile below this again the land is low and swampy on the west, with a bare dry gravelly point on the east. No strong clays have been seen for some time.

37th and 38th Stretches.—Spruce timber on both sides. Land low and swampy, or running into muskeg, as far as can be judged from the canoe, and so continues to the 40th stretch, at the end of which we encamped for the night. Barometer 29.7.

August 1st.—Barometer 29.6.

Once more resuming our journey, the 41st Stretch is nearly due north, and a small stream or brook ten yards wide falls in on the right. On the east side, the land is low and covered with a growth of spruce and tamarac. On the west it is higher, and the timber aspen and birch, with a few tamarac.

42nd and 43rd Stretches.—The higher and drier ground, and therefore the aspen and birch, etc., are now on the right or eastern side, and the lower and wetter ground, or, in other words, swamp, with its appropriate growth of spruce and tamarac, is on the left or western side.

44th Stretch.—The banks on both sides are now higher and show a great deal of aspen.

45th Stretch.—A good-sized stream enters this, the Kenogami river, on the west side. Elm trees, or what seem to be such at a little distance, cover an island at the mouth of this stream. It is called Nes-taw-pow-tick by my guides.

46th Stretch.—For some distance the land has been higher, drier and apparently better on the west side. It is now best on the east side, and we stopped in order that I might go back and examine it. The bank at this point rose to a height of 35 feet above the present water level of the river. It was composed of shelly clay and sand, the latter as usual on top.

The timber consisted of aspen, poplar, birch and spruce of medium size. The country is level, as usual, and soil of fairly good quality. Half a mile back from the river, however, this is all changed. Bog-moss (sphagnum) had taken possession of the soil, the aspen, poplar and birch had given place to spruce and tamarac entirely, and these even had dwindled in size and become scrubby and worthless. Here the bog-moss and peat were found to be four feet in thickness, and immediately below we found clay as usual. Now, the question is: What has become of the sand which, as seen in the banks of the river, overlies the clay to the depth of many feet? The only rational explanation of this that suggests itself to my mind is, that this sand is generally an alluvial deposit only, brought down and left there by the water of the river during the spring freshets; the depth of this sand or sandy loam being greatest on the immediate banks, and thinning out as we go back, until at a comparatively short distance the clay sub-soil (as seen in the bank) comes to the surface, and we have at once, as the result, wet land, bog-moss and peat.

50th Stretch.—The country continues low and flat, the land for the most part such as last described. We now come to a large tributary on the west side called by our guide Kajee-ja-a-sheesh, which rises he says near Long Lake. It is three chains in width, and is probably the river alluded to by Dr. Bell, as draining several of the lakes lying north-west of Long Lake, and called Ka-wa-kash-ka-ga-ma. It may be, that I have failed to catch the name correctly, which is not unlikely, or that there may be different names given to the same river by the Indians on the Height of Land who are Ojibbewas, and those of the lower Albany and Kenogami, many of whom are Crees.

52nd Stretch.—The land continues low and wet. Sounded the depth of the river and found it upwards of ten feet in the middle.

53rd Stretch.—Went back on the east side where the bank was hardly twenty-five feet in height. Found near the top of the bank poplar, spruce, birch and aspen of good size. As we advanced we came where the bog-moss began to cover the ground very soon, but it increased very slowly in thickness. Still the timber fell off in size and healthiness as we went on until at the end of half a mile the trees were reduced to little more than half the size they were near the bank, though some were still about twelve inches in diameter. There were a good many trees of large size lying on the ground and rotting. I saw no signs of any recent fire. My impression is, that where the land is annually or even less frequently inundated or overflowed with the water of the river, which deposits more or less sediment; the sphagnum moss does not thrive, and peat, if it accumulates at all, does so very slowly. There may be swamps or marshes, but rarely, if ever, peat mosses.

56th Stretch.—Land seemingly good on the right, but low and poor-looking on the left. Course northerly.

57th Stretch.—An island, and the river very wide, forming a deep bay on the west side. Land apparently pretty good.

59th Stretch.—Stop to examine the west side. Bank nearly twenty feet in height, with mixed timber of fair size. In quarter of a mile from the river, we came to swamp, crossing which the surface rises, and we soon came to muskeg, with peat three feet in thickness reposing on clay. In the next five stretches there was nothing in the appearance of the country to call for remark.

65th Stretch.—This brought us to one of the sites of Henly House, a trading post of the Hudson's Bay Company, which, like English River Post, has been shifted several times. Here it was on the left bank. The clearing is still to be seen. The soil appears to have been tolerably good. A quarter of a mile now brought us to the junction of the Kenogami and the Albany rivers. The river in its last stretches has been at least twenty chains wide, and looks like a placid lake, as it did to me two years ago when I passed this junction and looked up this self-same stretch as I was ascending the Albany to Martin's Falls and Osnaburgh. The barometer at the Forks, or junction, stood at 29.625

The fall or descent in the river from Mamattawa, or English River Post, to the Forks is very moderate. Dr. Bell's estimate of the distance is fifty miles in a straight line, and sixty miles by the river. In all this distance there is not a hill, a ridge, or even a knoll, as much as one hundred feet in height that can be seen from the river. The banks are generally from ten to thirty feet, and the elevation of the great plains, largely covered with peat-mosses, lying on both sides the river, probably ranges from thirty to fifty feet above low water mark. There are consequently very few points where rock is seen in place. Indeed, I only observed it in two stretches, and there it barely rose above the present level of the water. That the rocks underlying the whole of this section of the country belong to the Silurian and Devonian formations admits, I think, of no reasonable doubt. Buried as they are, however, under the drift clays, there is no way of ascertaining the nature, thickness or order of succession in which the strata occur. I observed "marine shells" in a bluish grey clay on the Naugaugaming river, about four miles above its junction with the Kenogami, and at one or two other points in the banks of this latter between Mamattawa and its junction with the Albany river. Some of these collected by Dr. Bell are named by him as follows: 1. Saxicava ragusa; 2. Myatruncata; 3. Tellina proxima; 4. Cardium Greenlandicum; 5. Leda truncata; 6. Mytilus edulis; 7. Tellina Greenlandica; 8. Buccinum undatum.

Some of the fossils found by Dr. Bell on this river above the Mamattawa, near Pembina Island, were submitted to Mr. Billings, and recognized by him as belonging to the following:—Four corals, viz., Favosites Gothlandica, Halysites catenulatus, Syringopora and Zaphrentis; two Branchiopods, Strophomena and a Rhynchonella, together with a Trilobite belonging to the Genus Encrinurus. He (Mr. Billings) says, "I consider these fossils to be Upper Silurian, about the age of the Niagara formation." The commonest fossils, according to Dr. Bell, are, 1. Small Orthoceratites; 2. a large chambered shell-like Nautilus, and one like Holopea, but Mr. Billings did not think these fossils could determine the age of the formation.

This stretch of the Kenogami, or English river, is altogether the finest reach of navigable water I have seen on any river north of the Height of Land. Even at this season a steamer drawing three or four feet of water could pass over it with perfect ease and safety. Above English River Post the river runs more rapidly and in the ripples or streams, and in some of the very wide places, probably two feet is as much water as could be depended upon at this season. In spring of the year, however, the water rises from ten to fifteen feet above its summer level, and I have no doubt whatever that steamers of large size could then ply between the eighteenth portage and the junction of the Kenogami with the Albany, a distance of 120 miles.

FROM THE FORKS, OR JUNCTION OF THE KENOGAMI AND ALBANY RIVERS, TO ALBANY FACTORY.

As it was my intention, after visiting Moose Factory, to return by the Missinaibi river as far as New Brunswick, and from thence to explore the country in the direction of Long Lake, and as I had (in 1881) examined and reported on the general features of the country passed through on the route from this point to Albany Factory and from thence to Moose Factory, I propose hurrying over this part of our journey as quickly as possible, and the observations I may be able to make will be few and short.

It was nearly three o'clock in the afternoon when we left the Forks and took our way down the Albany, which here is of considerably more than average width, with a number of islands. The water, however, at this season of the year, is not nearly so deep as it is in the Kenogami, and on that account, although the current is very much stronger, and frequently rough, yet our progress is slower, owing to the caution necessary to guard our canoe against serious injury from the sharp rocks in the bottom. Some twelve miles or so from the Forks, and a short distance below the site of Old Henly Post, we camped for the night.

August 2nd.—Barometer 29.7.

Our camp was on a point on the south side of the river, which is probably submerged at the period of the spring freshet. The soil is alluvial, of good quality, and here some large spruce and poplar, which had escaped the almost universal conflagration in 1881, were found growing. It was a raw, wet morning, and about 8 a.m. before we started.

The course of the river varies between N.E. and E.N.E. In width it is from quarter of a mile to one-third of a mile. Current strong, with frequent short rapids, sometimes occasioned by the out-crop of the flat rocks underlying the bed of the river, and at others by reefs of stones or boulders extending across the river. The noise occasioned by the flow of the water over and between the stones forming the natural weirs or dams, is often heard at a considerable distance, and leads the voyager to expect a much greater fall, and rougher water, than he finds when he reaches them. The descent is not more than from a foot to eighteen inches. In its passage over the irregular masses of limestone the water is in many places thrown up six or eight inches above the ordinary level or surface, often producing, when viewed from a distance, a peculiar "dancing" appearance, especially if the atmosphere be in that state which gives rise to what is called "mirage," as is frequently the case on these large rivers. I have been repeatedly deceived by this appearance, taking it for wild-fowl flapping their wings, or flying above the water. The water is shallow, but not so low as when I ascended the river two years ago. It was then lower than had been known for many years, in consequence of the long continued drought, and bush fires were raging at short intervals all the way from Albany Factory to Martin's Falls, a distance of over 200 miles. The country is flat, and the height above the summer level of the river seemingly forty or fifty feet. We occasionally passed points of good alluvial land, and along the higher banks there is the usual strip of drier and better land, bounded at no great distance by peat mosses. The timber, with the exception of small spots at considerable intervals, has been destroyed by fire. Several brooks and streams have been passed in the course of the day, the most considerable being the "Chemahawgan," on the right or south side. This stream is at present only twenty-five or thirty yards in width, but the size of its bed shows that it must be a large river in the spring. This and the other streams passed since we left the Forks have their sources in lakes, lying at various distances on each side the Albany, but more particularly on the south side. These lakes, although sometimes of considerable extent superficially, are, I believe, shallow. They owe their existence, as I conceive, chiefly to the erosion and washing away of the drift clay by the action of the rivers which now flow from or through them; or in some instances, to the fact of their having formed the beds of larger rivers at some time or other, but which larger rivers have now changed their courses—changes of which there are not wanting many indications, especially as we approach nearer to the coast of James' Bay. The flat rocks form the bottom of the river in many places, but are not seen in the banks. The beaches are covered with pieces of fossiliferous limestone of all sizes, some of them so large and angular as to render it exceedingly improbable that they are erratic, or have been removed more than a few yards from the parent rock. But associated as they are on the beach with boulders of granite-gneiss, porphyry, trap, basalt and quartzite, which we know must have been transported in all probability from the East-main coast, there is an element of uncertainty attached to these pieces of limestone, which greatly diminishes the interest that would be otherwise felt in the fossils they contain.

A little above the Chemahawgan the bank on the north side is about forty feet in height, and here a recent land-slide had exposed a stratum of clay, containing marine shells, one species of which, the common "muscle," is found living almost everywhere at the present day on the shores of James' Bay. Another bears a very strong resemblance to a shell-fish called the "cockle," very common in the north of England. I have met with great numbers of these shells on the coast of James' Bay, but none actually alive, although I am persuaded from their appearance that they must be found further north in James' or Hudson's Bay than I have been. The existence of marine shells of living species, between three and four hundred feet above the present level of James' Bay, is an interesting fact, indicating, as it does, the submergence of the greater part of this territory at a comparatively recent (geological period). These shells are too fragile to have been transported or brought any great distance, and lived and died, in my opinion, on the spot, or almost on the spot, where they are now found. There is evidence to be seen everywhere on the coast of the fact that the water is either subsiding or that the land is rising.

We camped for the night a little below the Chemahawgan.

August 3rd.—Barometer 29.8.

About eight miles or so below our camping ground of last night we came to Chepy river, which also falls in on the south side and drains several large lakes, some of them, according to information given me by an Indian (in 1881), being probably not less than fifteen to twenty miles in length. This river must discharge a great body of water into the Albany when the spring freshet is at its height. It is 150 yards wide at the mouth, but contracts, as we ascend, to about forty yards. I went back on both sides, but soon came to muskegs. At one-third of a mile the peat and sphagnum-moss were five feet in thickness, and underneath the peat we found clay as usual. Taking samples of these, we resumed our journey. The main river at this point is very shallow and marshy, and nearly half-a-mile in width. Islands are now more frequently met with. The course has been north-east for some time. Pursuing our way for a number of miles through a badly burnt country, we came to and passed a large island called Cease-in-aga, camping on another still larger one lower down called "Bare-bone." Here we found the only standing timber seen for some hours.

August 4th.—Barometer 29.8.

Before leaving camp this morning I took samples of the soil and measured some of the larger trees. The spruce were six feet six inches in circumference; aspen, thirty inches to fifty inches; balsam and birch, about thirty-six inches in circumference. The ground was covered with the fruit of a species of blackberry, here called the eye-berry, one berry only in general growing on each plant, the height of which is rarely more than six inches. With the exception of a low point, here and there, the country adjacent to the river has been all overrun with fire and the timber either killed or entirely consumed. Following, however, partly as a result of these fires, we find abundence of wild roses, and other flowers, blue, white, pink and yellow, covering the ground in many places. About four o'clock in the afternoon we came to a stream on the left or north side called Fishing Creek, said to be about fifty miles from Albany Factory. Here there is one of the fish-traps before mentioned, and several Indian families were camped on the beach. We stopped, as is the custom, to shake hands, and presented each of them with a small plug of tobacco, which was all, indeed, we had to give. We had not started very long, however, when on looking back we noticed that the whole lot of Indians, numbering some six or seven canoes, had hurriedly struck their camps and were following us up, evidently resolved to camp alongside of us when we stopped for the night. As we were not at all anxious that they should, we pushed on at a rapid rate until it was getting dusk, and we were in danger of damaging our canoe if we proceeded further. Our pursuers had been left out of sight, but it was in vain; we had barely got our fire lighted and tents up when they arrived and, as I expected they would, camped on the beach close by. What they expected, I have no doubt, was a good supper and possibly other presents, for the Indians on this river are among the poorest I have met with. If this was really their object, they were doomed to be disappointed, and took their departure in anything but a good humour, as I thought, before dawn of day.

The only point at which I went back to-day, was on the north side, where there happened to be a nice little belt of fair-sized and healthy aspen, birch and spruce trees on the bank. The two former very soon gave place to spruce, which became smaller and more unhealthy as the sphagnum and peat increased in thickness, until, at the end of three-quarters of a mile, nothing but a scattered growth of dwarfed and unhealthy spruce and tamarac remained. At this point the peat was seven feet in thickness, and, as usual, reposed on clay. A very small delicate variety of cranberry is almost always found growing on these peat-mosses. They are of excellent quality, but scattered thinly over the surface as compared with the larger variety found on the marshes of Georgian Bay and Lake Nipissing. I found a few of last year's berries which were still quite good, though somewhat shrivelled. Our course has ranged from east to east north-east.

August 5th.—This being Sunday, we remained encamped.

August 6th—As we wished to reach Albany Factory to-day, all hands were called at 3.30 a.m., and we were in the canoe and ready to start at 4 a.m. Course N.E. to E.N.E. Barometer nearly 30.00. We soon entered on a still or slack-water reach, where the width of the river was about one-third of a mile. Country flat and mostly burnt. I have found, however, in several instances, that these bush fires are often confined to the drier ground and larger timber lying along the banks of the river, and did not extend far back into muskegs or peat-mosses which have evidently been too wet to burn.

About 8 a.m. (having spent one hour over breakfast), we arrived at the head of a group of islands which extends unbroken from this to the Hudson's Bay Company's Post, a distance of twenty miles. At 8.15 a good sized stream falls in on the right. Course, N.E., and current now strong with frequent rapids. Islands generally low, and liable to be flooded to a greater or less depth on the breaking up of the ice in the spring. Limestone is seen here in place, and several specimens were taken. A compact, dark-coloured indurated clay underlies the alluvial gravel and sand, which appear to be diminishing in thickness. This clay is highly calcareous. Timber, poor spruce and sometimes poplar. Channels among the islands somewhat intricate. At two p.m. we arrived at Albany Factory, and were hospitably received and entertained by Mr. Broughton, the officer in charge of this district. The distance from the junction of the Kenogami to Albany Factory is about 130 miles, and from thence to English River Post sixty miles, or 190 miles in all from English River Post (Mamattawa) to Albany Factory.

The number of inhabitants permanently residing here summer and winter is probably not more than fifty or sixty, as during the winter every one able to hunt, and not required at the post, is away. In the summer, however, particularly the earlier part, there must be at least four or five hundred, as the Indians scattered over a very extensive district, resort to this post with their furs. A very large proportion of both the native and white population were suffering at the time of our arrival from what seemed to me hooping-cough, and a considerable number of deaths had already occurred. I was afraid that some of my party might be laid up with it, but fortunately all escaped.

The Albany, from the Factory to the junction of the Kenogami, is a very large river, but too shallow to admit of steam navigation at this season of the year. It is, beyond all doubt, however, navigable by passenger steamers of light draft for sometime after the ice leaves, not only to the Forks, but to 18th portage on the Kenogami river.

August 7th.—Barometer 30.

Having stayed a day and a half at this post, and been kindly provided by Mr. Broughton with a fresh supply of flour and pork, to which he added, at my special request, twenty salt geese, we now only want a competent guide to Moose Factory to be able to resume our journey.

FROM ALBANY FACTORY TO MOOSE FACTORY.

August 8th.—Barometer 29.9.

Owing to the prevalence of sickness, Mr. Broughton had some little difficulty in getting a guide, but at length induced a native with the imposing name of Solomon Wesley, and his son, a lad of about seventeen years of age, to accompany us. The principal object we had in taking the son, was to enable his father to return, as would be necessary, in a small canoe. There are a number of families connected with this post surnamed Wesley, and the Christian names are, with few exceptions, taken from the Scriptures. It is owing, no doubt, to the fact that a Wesleyan minister was the first Protestant missionary in this part of the territory.

Bidding farewell to our kind friends, we left Albany at 7 a.m. with every prospect of making a good trip, the weather and wind being favourable. The lowness of the coast and extreme shallowness of the water are the most remarkable features. At no time after leaving the mouth of the river were we for the first three or four hours nearer to the shore than one mile and freqnently two miles, and yet the bottom could be easily touched with a paddle. At high water, however, vessels drawing eight feet of water can enter the river and proceed up to the Factory. Out towards sea it is dull and hazy, as it usually is, so far as my experience goes, on this Bay. Often there is illusive appearance of land in the distance, the combined effect probably of fog and the mirage. A wide belt of marsh covered with grass intervenes between ordinary high water and the woods, which seem to be sometimes as much as three or four miles distant. We did not (indeed could not, without wading a long way) land anywhere for some five hours. A low reef, covered when the tide is in, at length afforded us the desired opportunity. All haste was made to boil our kettle, the wood and water for that purpose having been brought with us from Albany. There was barely time to do this before the rising tide compelled us to take to the canoe and eat our dinner on board. This, thanks to the thoughtful kindness of Mr. and Mrs. Broughton, was not difficult, inasmuch as they had provided and sent for our use a nice fillet of veal already cooked, with some excellent fresh butter and fermented bread, luxuries in which, until our arrival at Albany, we had not indulged for two months. We did not land again until evening, when it was necessary to do so in order to camp. Distance from Albany about thirty-five miles. Mosquitoes numerous, and of a singularly light colour, almost indeed white.

August 9th.—Barometer 29.95.

Started at 5.40 a.m. Course from S.E. to S.S.E. At seven we landed for a short time at the most northerly Cock point. A large number of boulders are collected here, composed of different kinds of rock. Abundance also of sea-weed. Saw three white porpoises at a short distance. Again were obliged to take dinner on a reef. About 2 p.m. we had to make a portage across a reef which extended from the shore a long way out into the bay. These reefs, which are very frequent, are composed almost entirely of boulders. At 5·30 we camped, our guide stating that there was no good landing or suitable camping ground for a considerable distance. Found sufficient drift-wood for our fire, but had great difficulty in obtaining any fresh water. The coast low and flat, and very shallow throughout.

August 10th.—We were up at half-past four, about which the tide was in, and we could have embarked easily had the weather been favourable. It was, however, blowing too hard, and we had to wait. About noon, the wind having moderated, we succeeded in getting off, but the canoe and all our things had to be carried out fully half-a-mile to meet the returning tide. Shortly after we bumped very heavily on a boulder, and if our canoe had not been strongly ribbed I suspect it would have sustained more serious injury, and probably filled. As it was, although it leaked badly, we kept on until we reached what is called the North Bluff about half-past six in the evening. Here we landed and camped for the night. The Hudson's Bay Company have a beacon here, seemingly 100 feet in height, and of good substantial material and workmanship. The distance from Moose Factory is not now more than sixteen miles.

August 11th.—This morning was very stormy and wet, and we were unable to move. Many wild geese, ducks and plover had been seen between Albany and the High or North Bluff. While storm-stayed here, our old guide and his son took their guns and went off to a marshy, low-lying part of the coast to the north of our camp. After an absence of four or five hours, they returned with the following bag, which, considering the primitive-looking single-barrelled guns they carried, was not at all bad:

	Weight.
Four brace Pintailed Duck, or "Minnik"	3 lbs. each.
Two brace Grey Duck	$2\frac{1}{4}$ " "
Seven brace Large Plover	$10\frac{3}{4}$ oz. "
One brace Yellow-Leg Plover ... net weight, say	6 " "
Half brace Curlew	9 " "

When James' Bay is accessible to the sportsman by rail, and game becomes scarcer elsewhere, I have no doubt whatever that many will come to enjoy the wild-fowl, plover and snipe shooting to be had here, from the middle of August to the middle of October. Further north, on the numerous islands in James' and Hudson's Bay, it is probable that good grouse and ptarmigan shooting may be found. The country between Lake Superior and James' Bay offers no attraction whatever in respect of game. But on the shores and islands of Hudson's Bay, including, of course, James' Bay, there are almost incredible numbers of geese and other wild-fowl, which find here the safest and least disturbed breeding ground on the continent, together with abundance of suitable food. The advent of the "sportsman" under these circumstances is only a question of time.

August 12th.—Sunday.

Still stormy. Water brackish and bad; but no better to be had, so have to make the best of it. What is called the "bluff" is a low, gravelly ridge of not more than a quarter of a mile in length, and elevated, I should say, not more than ten feet above spring tides. On the top a considerable number of wild strawberries, now ripe, are growing. On the slope quantities of vetches and peas. I had some of these gathered and boiled, but they were not by any means good.

August 13th.—Barometer 30.

Started at 7.25 a.m., both wind and weather being favourable, and stopping only at Middleboro' Island for dinner, reached Moose Factory at 2 p.m. Here, it is needless to say, we were kindly welcomed by James L. Cotter, Esq., the officer in charge of this department.

Our actual voyaging time, from Albany to Moose, was three days, and the distance is, I think, about 100 miles. I fully expected that Mr. Broughton, who intended to leave Albany the day after us, would have reached Moose Factory before us. But he, like ourselves, had been storm-stayed, and did not arrive until this evening.

August 14th.—I was glad to find that there was no criminal business to detain me at Moose. I hope that before anything serious of that nature has to be dealt with the Award of the Arbitrators may have been confirmed, and a lock-up built here. A constable, too, would needs be appointed and paid by the Provincial Government. Conscious of the difficulties of the position, and of the disadvantage at which we are placed, I have abstained, as far as possible, from weakening the hands of the Hon. Hudson's Bay Company's officers, by any interference in little misunderstandings between them and their servants, leaving such to be settled in the way that they have always been. Cases, however, have occurred, and will occur, which should be decided by a disinterested, impartial and independent man. I took with me the Commissions appointing James L. Cotter, Esq., of Moose Factory, and W. K. Broughton, Esq., of Albany Factory, Justices of the Peace, and administered to them the usual oaths. As these gentlemen are both officers of the Hudson's Bay Company, it is desirable that there should be some others placed on the roll who are not directly connected with or dependent on the Company. I would, therefore, respectfully recommend that the Right Rev. Dr. Horden, Bishop of Mooseonee, and Archdeacon Vincent, be also appointed Justices of the Peace for this District. I am persuaded that under ordinary circumstances these reverend gentlemen might decline to act, but where they are the only eligible parties in the territory for the position, I trust that they may be induced to do so.

August 15th.—Mr. Spencer and his family started to-day with two canoes and six or seven men for Michipicoten. Mr. Spencer is in charge of one of the Hudson's Bay Company's Posts on the East-main coast, and is taking his children to the neighbourhood of Saugeen, there being no opportunity of obtaining a suitable education for them in the territory. A sufficiently endowed and well-conducted school at Moose Factory would be one of the greatest blessings that could be bestowed on the natives of this district. The Federal Government take from the people from ten to twelve thousand dollars a year in taxes, and not one penny is given back to them in any way that is known to me. The people are very dissatisfied, and I don't wonder at it.

Having obtained from the Hudson's Bay Company sufficient provisions to last us to Brunswick, and learning that the water is falling rapidly in the river, and rendering navigation more tedious and difficult every day, I propose starting out on our return tomorrow, if all be well.

FROM MOOSE FACTORY TO NEW BRUNSWICK.

August 16th.—Mr Cotter having engaged a guide to accompany us, we bade adieu to all our friends and acquaintances at Moose, and with the usual honours took our departure. It was three o'clock in the afternoon, and our first camp was not more than seven or eight miles from the Post.

Having travelled this route on two occasions already, in 1879 and 1880, and described the principal features of the country passed through, in my Reports for those years, I shall have little to say that is new in regard to it.

August 17th.—Water in the river very shallow and progress slow. Second camp on Little Asp Island, not more than twenty-five miles from Moose Factory.

August 18th.—Started at 5 a.m. Stopped to examine the "White Rocks," or gypsum beds, as we passed. This was one of the hottest days of the season, and ended in a thunderstorm, which compelled us to camp a little earlier than usual some three or four miles below the forks.

August 19th.—This being Sunday, we remained in camp.

August 20th.—Barometer low, 29.4.

The morning wet, so got breakfast before we started. Left camp at 7.15 a.m. At 9 a.m. we came to the forks, or junction of the Mattagami and Missinaibi rivers. This, roughly estimated, is about fifty miles from Moose Factory. We pursue our journey up the right hand or Missinaibi branch. Constant poling and tracking, and our progress slow and laborious. Camped abont seven miles below the "Long Rapid," which is generally assumed to be half-way between Moose Factory and Long Portage.

August 21st.—Started at 6.40 a.m. Another wet morning. Some fine large spruce, four to eight feet in circumference, at last camp. At the rapid just mentioned, I stopped to look at a bed of lignite coal, on the right bank, discovered by one of my voyageurs named "Michoo" in 1880. It is now mostly covered with loose stones and shingle, but is still visible in two or three places. I then estimated the thickness of this seam or bed at about three feet, The quality, I think, is equal, if not superior, to any I have seen on this side the Height of Land. We finally camped some nine miles above the foot of this rapid.

August 22nd.—It was nearly seven when we started this morning. No care, consistent with anything like reasonable progress, can save a canoe from injury in the present shallow condition of the river, and ours is badly damaged, and very leaky in spite of all the guide can do. After breakfast and a considerable time spent in gumming the canoe, we once more got under way.

River generally from five to six chains in width. Banks from sevety-five to one hundred feet in height. In the course of the day we passed the Wahboose, Ash and Poplar rivers, the latter a large tributary which falls in on the left side. We were overtaken with a very severe storm of wind and rain, one of the worst of the season, and camped on the north-west side a little above the junction of Poplar river.

August 23rd.—Barometer low, 29.15. Wind still very high, and weather threatening. Got breakfast over, canoe gummed, and started at 6.45 a.m. We had not proceeded far when rain began to pour down and continued with little intermission all day. What between tracking or towing along the beach through long grass and dripping willows, the necessity imposed on those in the canoe of now and again jumping overboard and wading considerable distances in order to lighten the canoe, and the rain, my crew had a very trying time of it, particularly as their feet, partly from the tracking, but chiefly from the continued wetness, were becoming very tender and sore. This was a new and hard experience for my young recruits from Toronto, but I was pleased to see how well they bore up under it, and how willingly they performed a fair share of even the hardest and most disagreeable of the duties that fall to the lot of the voyageur. We finally encamped on an island about three miles above the mouth of a stream called Shou-weska-sipi.

August 24th.—Barometer 29.7.

Started at 7 a.m. The river is still from four to six chains in width, but shallow and full of boulders. No rock *in situ* has yet been seen above water, although there cannot be a doubt that the Silurian and Devonian strata met with on the Kenogami, Albany, Mattagami and Abittibi rivers underlie the whole country through which we have been passing. About mid-day the river decreased in width, but became deeper. At 3.45 p.m. we came to the junction, on the right, of the Wabiskagami river; and three-quarters of a mile beyond that, on the same (north) side, the site where "Old Brunswick," a trading-post of the Hudson's Bay Company, once stood. The soil here is a brownish, sandy loam of good quality; and there is, I have little doubt, a tract of very fair arable land lying here, between the Missinaibi and Wabiskagami rivers. The little stream is at present little more than a chain wide. About four and a-half or five miles above the junction we camped for the night. Immediately opposite the camp, and on the south side of the river, is the bed of Kaolin, or China clay, discovered by me in 1880, and the nature and extent of which I was then unable to ascertain owing to the high flood which prevailed in the river. I purpose examining it before leaving in the morning.

August 25th.—As soon as the canoe was gummed and ready to launch, I crossed over the river to examine the deposit of clay just referred to. The water being much lower than when I was last here, I could at once see that the quantity greatly exceeded what I had then any reason to suppose. It is in the form of a stratum or bed, the thickness of which is not less, I believe, than ten or twelve feet. It reposes on a bed of white sand with the slightest possible tint of yellow. Above the clay is another stratum of the whitest sand I have yet seen in Canada. This is upwards of twenty feet in thickness. The clay is perfectly pure, and white in some places and bright red in others. At the outcrop where it has been exposed to the action of the water of the river when flooded, it is a good deal confused and mixed, so that it is not easy to obtain it in a state of purity. I am sanguine, however, in my belief that when opened up the two clays will be found to be separate and distinct, and that it may be obtained in a state of purity. The sand is admirably adapted for the making of glass of the finest quality. These interesting deposits can be traced for nearly half a mile in the banks of the river, and I have no doubt are of such extent as to be practically inexhaustible. The banks on both sides are high, say from eighty to one hundred and twenty feet. The upper white sand is seemingly overlaid by boulder or drift clay, and numerous deep ravines extend upwards from the river towards the plateau above. About three hours, during which we probably made six miles, brought us to Coal Brook, a small stream on the left, on which there is a bed of lignite coal. The lignite, of which pieces may be seen at any time on the sand or gravel bank at the junction, is found in place about half a mile up the brook, where it appears in the bank on the south side. It is decomposed and impure, as might be expected at the outcrop, where it has been long exposed to the action of the air and water. This coal was seen and described, if not first discovered, by Dr. Bell. In its present undeveloped state it is impossible to speak very confidently either of the quality of the coal or thickness of the seams, for I am inclined to think there are several. On the whole it has, in my opinion, a promising appearance, and in connection with the deposits of China clay and sand, only a few miles below, may some day prove exceedingly valuable.

Resuming our journey, three hours' brisk paddling against a moderate current brought us to Round Bay, at the foot of a formidable succession of rapids, in a gorge, walled in on both sides by steep and in many places perpendicular banks upwards of one hundred feet in height. This has been named "Hell-gates" by the old voyageurs. At the last of these rapids, some two or three miles above Round Bay, the river is no longer navigable, and a portage called Long Portage commences. The day was now well advanced, and, as the ascent of these rapids would I expected not only tax the energies of my crew to the utmost, but occupy several hours, I concluded to camp here at Round Bay for the night.

Here in this gorge is the first rock usually seen *in situ*, with the exception of the White-rocks or gypsum beds, from Moose Factory to Long Portage, a distance by the river of more than 130 miles. Here we have in all probability the southern boundary of the great plain, and its underlaying Silurian and Devonian strata. This plain extends in a northerly direction to the shore of James' Bay, and in a north-westerly direction, I believe, to the mouth of the Severn river, some five hundred miles distant. I am inclined to think that the underlying flat rocks are even much more extensive than the plain itself, and extend far out into Hudson's Bay, on the western side more especially. They consist, so far as I have had a opportunity of examining them, chiefly of rather thinly-bedded limestones, light-coloured and variegated sandstones, almost invariably more or less calcareous; dark, purplish and greenish-coloured shales, sometimes in the banks of rivers decomposing, and assuming the appearance of reddish or mottled clays or marls. The lowest rock in the series that I have met with is a mottled, reddish-brown and greenish, grey, indurated clay, probably a decomposing shale or slate, to be seen when the water is low on the east side of the Abittibi river, between the Clay Falls and Sextant Rapid. It is upwards of six feet in thickness; how much more I could not see, as it was partly under water. Above this there was a bed eight feet in thickness of very coarse red or grey sandstone, somewhat soft and easily crumbled, and which reminded me of "Old Red Sandstone." From the lower end of "the long rapid or ripple" to the Otters' Rapids and Portage on the Abittibi river, we have, in my opinion, one of the best exposures in this territory of the rocks which underlie such a vast extent of country to the north aud west. I have often regretted that I did not know how rare such exposures were in this territory, or I should have examined and studied the formation in 1881 much more carefully than I then did. There is no such exposure on any of the other rivers that I have explored, and I mention this for the information of geologists or others who may travel that route and feel an interest in the subject.

From this, Round Bay, to the Height of Land, and thence to Lake Superior, Laurentian and Huronian rocks are the only ones found "in place." Immediately below our camp, on the opposite or north-west side, is what at first sight appears to be a high bank of clay or sand. It is partly composed of a fine soft, light-grey sand, and partly of mixed sand and clay. I took samples of these, and on afterwards testing the fine, soft-feeling sand referred to, was surprised to find, not only that it effervesced when treated with muriatic-acid, but was almost completely dissolved, thus proving not a true sand at all, but rather comminated or powdered carbonate of lime.

As regards the land, I shall merely observe here, that on this Missinaibi branch of Moose river, although peat-mosses, here as elsewhere, cover the far greater part of the plain, yet, I think, from its junction with the Mattagami to this point (Round Bay) there is a larger proportion of arable land than on any other river, the Kenogami excepted, on this side the Height of Land. This is owing to the greater elevation, as I think, of the plain above the river, and to the greater prevalence of gravelly or sandy loams overlying the clay for a greater or less distance on each side of the river and its tributaries.

The timber consists of aspen, spruce, birch, tamarac, poplar, balsam and cedar, and between Old Brunswick and our present camp I observed some few elm and black ash. There is a spruce tree close by our present camp which measures ninety-one inches in circumference, and a fair sprinkling of others around from forty to sixty inches circumference. The belt of good sizeable trees of any kind is confined, however, to the immediate banks of the rivers and streams.

August 26th.—About ten minutes after we started this morning we came to the first strong rapid. This appeared too heavy to ascend by poling, and three of my crew jumped ashore with the tow-line, the bowsman and steersman assisting with their poles. When just at the worst part and every man's strength was taxed to the utmost, the line parted and the canoe was swept down the rapid. This might have resulted disastrously, but fortunately our frail craft did not strike on any of the rocks or boulders until we succeeded in bringing it up again in the eddy. Doubling the line, we tried it again and succeeded. There are eight rapids in all. At three of these the line had to be used; the others were poled up. It required two hours and a half to make this stretch, the length of which does not exceed, I think, two miles.

The deep gorge in which the river here flows has a magnetic course or bearing—nearly north and south. When I first passed this way, it seemed to me that the gigantic task of excavating this channel had been performed by the water of the river, aided only by the frost in winter, the powerful action of which in splitting and destroying the hardest rocks is well known. I am now of opinion, however, that it owes its existence largely to glacial action, supplemented to a greater or less extent by that of the water and frost. The river here is from two and a half to three chains wide and full of rocks. The banks are composed of schists, generally micaceous, traversed by numerous granite dykes or veins, and which are supposed to belong to the Huronian system. They rise to a height of from 100 to 150 feet, and where the slope will admit, are covered with more or less soil, bearing a growth of mixed timber. I have hardly a doubt that on the top of these apparently rocky and sometimes precipitous banks, boulder and drift clays and sands will be found covering the entire surface to a considerable depth, and that outside the channel of the river little, if any, bare rock can be seen. None of the veins that I examined contained any ore or metal of economic value and importance. Long Portage is on the east side, and one mile in length.

The rest of the day was consumed in getting our things over the portage, and when we camped at the upper end, everything had been brought across but the canoe. The fall here, by Dr. Bell's measurement, is 140 feet. The soil on the portage is a light clay loam. A short distance east of the trail I saw good spruce from four to six feet circumference, and medium-sized aspen, poplar, birch and balsam, and a luxuriant growth of grass near the lower end.

August 27th.—The canoe having been brought across and breakfast over, we continued our ascent of the river. The rock at the upper end of the rapids is gneiss. A tributary falls in on the west side immediately above the rapids. Forty minutes took us to the next portage, called "Storehouse" portage, from the fact that the company had a storehouse at the upper end. Here passing travellers were wont to register their names and the date of their arrival, destination, etc., on the logs and beams; but on crossing over the portage I found that the house had been burnt, apparently not very long ago. It must have been set on fire, or struck with lightning, as there was no appearance of its having resulted from bush fires. This portage is on the east side also, about half a mile long, with a rise of seventy-five or eighty feet.

About an hour brought us from Storehouse to Conjuring House Portage. We were greatly delayed this stretch (which is short) by the shallowness of the water and number of boulders. The portage here is on the right or west side, and about half a mile long. It had been rendered quite impassable by a windfall. This had been caused by a hurricane so severe that every tree almost had gone down before it. If Mr. Spencer's men had not chopped it out roughly, it would have taken us more than a day to have got across. Having at length got over this, a few hundred yards took us to the next portage, called Riverside Portage, one-third of a mile in length and on the west side. This was also in a very bad state, but the men after a long and hard struggle succeeded in taking the canoe and its load (with the exception of a little pork and flour left at the lower end in case of accident) up the rapid. A short distance above this we ascended a very strong rapid with the aid of the tow-line, and in another mile camped for the night. It had rained for some time before we stopped to camp, and what with the rain and the leakiness of the canoe, almost everything we had was more or less wet.

The country is low and does not show to much advantage. The river is full of reefs and rocks of gneiss, and the water so shallow that our progress to-day has been very discouraging.

August 28th.—From the time we started in the morning until one o'clock in the afternoon, the character of the country and of the river continued the same as yesterday afternoon. The river is one continued rapid, necessitating the constant use of our poles It is even shallower than yesterday, and its bed covered with boulders and sharp rocks In order to save the canoe and make any progress at all, the men are obliged to get out and wade, and what with stumbling over rocks and into holes, are frequently wet to their waists. They try to keep me as dry as they can, but sometimes I have to turn out also. With the long Esquimaux sealskin boots, which I now consider a necessary part of my outfit, particularly when voyaging on the coast, one can wade for a long time in water, not too deep, without inconvenience. On this occasion, however, my guide's feet had become so sore from being constantly wet from morning to night, and day after day, for more than a week, that he was hardly able to walk, and I let him and my bowsman, who was nearly as bad, have the only boots of that kind I had got. Indeed all the party about this time were so lame, with the exception of Mr. H. C. Hamilton, that it was with the greatest pain and difficulty they could oross the portages or leave the camp to bring a stick of wood for the fire, especially over uneven rocky ground. In spite of all our care, the canoe was so much damaged that at the end of three miles we had to go ashore for repairs, which took nearly two hours to make good. While these were making I went back on the east side. The country was low and flat, and must be extensively flooded at the time of the spring freshet. There was a few inches of good mould on the top, but below that it was very stony. Timber—spruce, poplar, and a few aspen of not much account. The rock "in place" is still gneiss. At least ten per cent. of the gravel on the beach is limestone, and larger pieces, identical with those met with below the Long Portage, are quite common. I am collecting and numbering a few pieces daily, and will continue doing so, if I can find them, until I cross the Height of Land.

About a mile above this place we enter on a fine stretch of slack-water, where the voyageurs laid aside their poles and took to their paddles. About five miles of this, interrupted by two or three small rapids, brought us to the mouth of a good-sized stream on the west side called the Mattawishquia. The land bordering on this stretch is somewhat better, particularly on the west side. The timber, mostly a second growth of aspen and poplar, with some tamarac. Spruce is much less general than below the Long Portage. Rock, gneiss, the strike of which is generally E.N.E. and W.S.W. Near the mouth of the Mattawishquia we found a stiff clay on the east side, overlying which there was sand to the depth of several feet. Two miles above the junction the river again becomes rapid, and poling becomes the order of the day. Forty minutes of this brought us abreast of Lower Skunk Island, and another hour to the upper end of the Middle Skunk, where we camped for the night.

August 29th.—Started at 5.55 a.m., and at 6.10 a.m. pass the Upper Skunk Island. At 6.40 we came to the foot of a rapid, from which to Kettle Falls, not more than three-quarters of a mile, the river is so shallow and full of sharp rocks that it took nearly an hour to get there. This portage is on the west side and is only about 100 yards in length. The fall is about ten feet at present. When the river is flooded, it may be a few feet more or less.

The rock here is micaceous-gneiss, the strike of which is seemingly a little north of east, and dip nearly vertical. It is banded in its structure, the bands being often no more than a few inches in thickness and of unequal hardness. These are crossed by numerous small veins, either diagonally or at right angles, also of harder material. The action of the water, and the stones and sand carried down by the river when flooded, or possibly glacial action in other places, has caused an unequal wearing of the surface; the more micaceous bands, being the softest, have worn away most rapidly, leaving the harder bands and veins standing up. Thus this rock is at times fluted, and at others reticulated in a marked and singular manner. The harder bands and veins are more quartzose, and sometimes granitic. The depressions and elevations remind one of the crowns of huge molar-teeth. If we can imagine a sheet of ice several thousand feet deep with imbedded Silurian and Devonian rocks pushed over these molars with irresistible force and under tremendous pressure, we may perhaps have a glimpse of one of nature's mills which grind slowly it may be, but exceedingly fine, and accounts, possibly, for the great deposits of clay marls, calcareous gravels and sands extending southwards to the shores of Lake Superior. This fluted and reticulated character of the gneiss is not confined to this spot, but is seen wherever the rock is exposed, for many miles both above and below. In some places where there is a larger spot of the softer material pot-holes have been formed, and it is to this circumstance, I believe, that the name of "Kettle" Falls owes its origin.

Above this we encountered a long succession of rapids, requiring, with the exception of a short stretch near Black Feather rapid, constant poling. It took three hours to reach Muka-tai-qua-nai portage. A demi-charge only was made here, the canoe and some of our things having been poled up the rapid.

In half-an-hour from the time we left the upper end of this portage we came where the river expands from four or five chains, its usual width, to more like a quarter of a mile, with a good sized island called Skiminis. About the end of the next half-hour a stream ten yards wide falls in on the west. An hour and a-quarter from this point, during part of which time the current admitted of the use of paddles, brought us to Rocky Island portage. Our things were for the most part carried over, but the canoe with a few articles was poled up the rapid, which seemed to me a very difficult and dangerous thing to do, and what, I think, my voyageurs would never have attempted but for the soreness of their feet and the pain they would have suffered in carrying a heavy and water-soaked canoe over this rough and rocky portage. The fall here is ten feet in about quarter of a mile.

We camped about a mile above this portage.

The land, as seen to-day, is if anything a little higher, the ridges sometimes rising twenty-five to thirty feet above the river. The subsoil is clay, and sometimes the soil also is a clay-loam; but generally the clay is covered to a greater or less depth (at least near the river) with sandy-loam or gravel, and on some areas there are a good many boulders.

The timber has been of the usual character, with the exception of cedar, which is now more frequently met with and of larger size.

There is little or no change in the rock, excepting that on Island Portage the rock bore a very strong resemblance to that seen at the Smooth-rock Falls on the Mattagami, and which, I think, Dr. Bell considers to be Huronian.

August 30th.—Barometer 29.3. Weather showery.

Started at 7.20 a.m, having concluded to take breakfast in camp, the canoe, as usual, requiring extensive repairs. We soon entered on a nice, smooth stretch of river, the width of which is still four or five chains. The current being moderate, and water sufficiently deep, we were able to use paddles and make good progress. About six miles from camp, or say seven miles from Island Portage, brought us to Ka-ka-gee rapid, up which the canoe was poled. Another stretch of six or seven miles ended at Smooth-water Fall, where it was necessary to make a portage, the fall in the river at that point being estimated at twenty-five feet. Two miles above this we met with another portage called Sharp-rock Portage, the Sharp-rock river falling in on east side, a little below the portage. Little over a mile from this we came to the Little Beaver rapid and portage, but this was poled up. Half a mile or less then brought us to the Upper or Big Beaver portage, some quarter of a mile in length and twenty-four feet of fall. Here we camped for the night.

The land seen to-day is better on the whole than on any other since we left Round Bay, below the Long Portage. The banks of the river have generally been higher, and good points of river bottom land, with alluvial soil, carrying a fine, healthy growth of timber, have been frequently passed. The ridges rise, in some instances, forty feet above the river, and land slides, the result of a clay subsoil, are more common.

Aspen, poplar, birch and spruce are the most common trees, and, judging from the description, size and healthiness of the timber, the land is, I think, fully better on the west than on the east side. In some of the smoother stretches, a luxuriant growth of grass, willows and alders are seen covering the banks, and, behind this fringe, cedar, poplar, aspen, birch and spruce. In a few places black-ash also was noticed. I observed to-day, also, in some parts of the smoother stretches, a grass with arrow-headed blades, which grows generally in rather shallow water near the bank, and of which I have been told the wild-geese are very fond. I have seen this grass in the upper stretches of all the rivers on this side the Height of Land, and most commonly at about this elevation. I have met with it, also, below the Long Portages, but in smaller patches, and more rarely.

Many pieces of fossiliferous limestone still appear among the stones and gravel on the beaches of the river. The rock met with *in situ* has been chiefly the micaceous-gneiss before mentioned. At this Upper Beaver Portage, however, I noticed a strong resemblance between the rock and that at Sturgeon Fall on the Mattagami. Here, however, in addition to the trap with the same peculiar spots, we have what I take to be quartzite.

August 31st.—Barometer 29.4.

Leaving our camp at Beaver Portage at six o'clock in the morning, we reached and made our next camp on Sugar-leaf Portage, at exactly six o'clock in the evening. About half-past nine (having breakfasted in the interval) we came to Albany Rapids. At the lower end of these rapids a demi-charge had to be made, and this was followed by a long stretch of heavy poling. An hour and a half later we arrived at the mouth of a river which enters the Missinaibi from the west. It is the largest tributary that we have seen since we left the Long Portage, being from two to two and a half chains in width, and discharging a considerable quantity of water. It is called the Albany river, but has no connection that I know of with the Great Albany river previously referred to in this report, and which forms the north-western boundary of the territory awarded to our Province. It may be, however, that there is a route up this river by which Indians in small canoes can strike the head waters of some of the tributaries of the Kenogami, or even of the Albany itself. My guide, belonging as he does, to Moose Factory, knows nothing of the country, or of the tributaries of this river, which is unfortunate. Passing on, the next portage was reached in four hours and a half. It was short, being over a rock only, and is called I think "The Devil's Cap." Another hour brought us to Sugar Loaf Portage where, as already said, we camped for the night.

As regards the land.—That next the river in the first stretches above Beaver Portage would make good meadows, but is probably flooded in the spring. About four miles above the portage, I went back a short distance, while breakfast was preparing, to examine the soil, and was rather disappointed to find that the timber of fair size on the bank was quite small and worthless a few hundred yards from it. On testing the soil I found it to be a fine light-colored sand. It is probable that the vegetable mould has been burnt off recently. The land opposite Albany Rapids is probably stony. Some two miles above these rapids there are a few fine alluvial points on the river. Two or three miles above this, at the dinner hour, I again went back, and although the timber at that point on the bottom land was healthy and good, it once more failed soon after reaching the top of the ridge, the aspen, birch and poplar, etc., found in the lower ground, giving place to small spruce. On trying the soil I found very little vegetable or leaf-mould here, but a hard, dry, light-coloured clay, which the roots of the trees seemed to be unable to penetrate. I expect that the soil has lost its vegetable-mould by fire, and has not yet had time to recuperate. Half way up the bank there was a sandy-loam, covered by a few inches of mould, and on the bottom land there was a foot in thickness of fine black mould resting on a mixed sand and clay soil. The subsoil as seen in the banks of the river is always clay.

The rock has been gneiss. In some places it has appeared—as massive gneiss—associated with trap dykes, and more or less of what I take for epidote, and which often has a polished surface when exposed to the action of the water and sand of the river.

September 1st.—Barometer 29.

We left this (Sugar Loaf) Portage at 5.40 a.m., and in thirty minutes reached the next, which is called Pond Portage. The former is on the west and the latter on the east side of the river. The fall here is about fifteen feet, and length of the portage about 200 yards. By the time all our things were across and breakfast over, it was eight o'clock when we got away from this portage. Boulder clays form the surface at both the last portages. In three-quarters of an hour we came to what are called the "Two Portages," but really only made one portage, and that somewhat shorter than the last. The fall in the rapid here is about eight feet, and my men lost a good deal of time trying to pole up it. The consequence was we did not get away from this portage until half-past ten. One hour's paddling brought us to the junction of Brunswick River, on the right or west side.

This river comes from Brunswick Lake, on which, after the abandonment, as I presume, of the old post of that name below Long Portage, another post called New Brunswick was established. This too was abandoned some years ago and Missinaibi, previous to that only a winter station, became the principal post. A family named Sanders, natives of the country, occupy, with the permission of the company, the buildings and land at New Brunswick. Expecting that I might be able to explore the country between New Brunswick and Long Lake, I had, before leaving Lake Superior, directed provisions to be sent to Michipicoten River, and wrote P. W. Bell, Esq., the officer in charge of the Lake Superior District, to be kind enough to have them forwarded to Missinaibi, and from thence, if any opportunity should occur, to New Brunswick.

We now therefore leave the Missinaibi and ascend this Brunswick branch or river. It is from a chain to two chains in width, and discharges a considerable quantity of water even at this season. The distance from the junction to the lake is about nine miles, and thence to the post three miles, or say twelve miles in all. The upward course of the river is nearly south, and from the outlet of the lake to the post about south-south-west. We were only obliged to make one portage, and that was about a mile above the junction, where there is a fall of about nine feet. The portage around this is on the right hand side and not more than one hundred yards in length. We came afterwards to several very strong rapids, the river at these points being only from ten to twenty yards in width, but these were ascended with the help of the tow-line, not however without a good deal of difficulty, and I have little doubt that when the water is high, portages become necessary at some of these rapids. The total rise from the junction to Brunswick Lake is roughly estimated at about twenty-five feet. The rock is still gneiss. The timber is mostly a second growth, consisting chiefly of aspen, tamarac and poplar. The land skirting both sides of the river is low and flat, and sometimes wet, but most of it would make splendid meadows for either pasture or hay, for it is only flooded for a short time on the melting of the snow in spring. The subsoil is clay, and the soil generally a clay loam, though over some portions the soil is probably sandy.

It was about six o'clock in the evening when we got to the post. Mr. Sanders with his wife and daughters were the only persons at the place, and by them we were kindly welcomed. I was exceedingly glad to hear that our flour and one keg of pork had been forwarded from Michipicoten and been awaiting our arrival here for some weeks. Our trip from Moose Factory had been so difficult, and the time occupied so much longer than I expected, that our supply of pork was entirely exhausted, and even of flour we had but little remaining.

Mr. Sanders' sons, of whom he has several, and the Indians who hunt in the neighbourhood, had it appeared all gone to Michipicoten for supplies, and had not yet returned, although he expected them in a few days. One of these (James Sanders) was my guide and bowsman two years ago, and I had hoped to find him here in the event of my being able to explore the supposed fertile country between this and Long Lake, as originally intended. The necessity, however, I was placed under of going from Long Lake to Pic river for my supplies, and the great difficulty and delay we have experienced in ascending the Missinaibi river to this point, have, together, consumed so much time that it is now too late to carry out my original intention. In the present low stage of the water in the rivers, however, it would, I think, at any rate, be impossible to get through to Long Lake, and from thence to Lake Superior. This region can only be explored in the spring or early summer, when the rivers are moderately full, and then guides who know the country thoroughly will be indispensably necessary. This, therefore, must stand over until, at all events, another season, when, if the Government thinks it desirable, it can be done.

In the meantime it may not be out of place to quote here from the Report of Mr. Gamsby, Engineer-in-Charge of the survey for the Canadian Pacific Railway from Long Lake eastwards to Moose river (Missinaibi branch). The line then explored by him, and referred to in his Report, lies south of that which I proposed taking from this, or some point north of this, as might be determined upon after consultation with my guides.

Mr. Gamsby reports as follows:—

CANADIAN PACIFIC RAILWAY,
OFFICE OF THE ENGINEER-IN-CHIEF,
OTTAWA, 19th May, 1880.

SIR,—In accordance with your instructions, dated October 15th, 1879, forwarded by steamer to Red Rock, directing me to remain in the country during the winter and continue my explorations eastwards from Long Lake, I proceeded at once to re-organize my party and procure supplies for the work indicated. These supplies were landed at Jack Fish Bay, Lake Superior, and thence carried to our initial point at the outlet of Long Lake. On reaching Long Lake, we arranged our season's operations as follows:—One assistant, with a small party, to survey and sound a portion of Long Lake, with a view to ascertain the practicability of taking the line across the lake, and thus avoid the long detour by the northern end. Two other assistants to carry on the exploration eastward. I fixed my headquarters at the Hudson's Bay Company's Post, near the outlet of Long Lake, from where I could visit both parties and give particular attention to the proper distribution of supplies. This arrangement was found to work satisfactorily, and was continued to the completion of our work. The exploring party commenced work about the 13th January, running compass line and chaining distances. The country, for the first ten miles, was found to be slightly undulating, with low gravelly hills. From this point the ground rises gradually to the summit, between McKay's and Shallow Current Lakes, terminating at a gravelly ridge seventy or eighty feet in height. About one-half mile south of the line a lower pass exists, with an easier ascent and ground more undulating. From the 19th to the 27th mile the country is undulating and gravelly, and the work would be classed as medium to light. From the 27th to the 34th mile, in the vicinity of Cross Lake, the ground is broken and rocky, particularly near the lake. A fair location may be obtained around the north shore of the lake by crossing a bay at the north-east end of about 250 feet in width. The southern shore is hemmed in by high rock bluffs, and appears impracticable. From the 34th to the 39th mile the country rises about one foot per 100 feet to a summit where a pass about 500 feet wide is found, a level spruce swamp. At the 39th mile a deep gorge is met, about 300 feet deep and forty chains in width. A detour of about one-half mile to the southward was made with the exploratory line, where a practicable crossing was found. I think a more uniform country would be found from five or six miles to the northward of the line explored. From the 39th to the 60th mile the country is chiefly swamp. Some streams are crossed, the largest about 100 feet wide; the banks are timbered with spruce, tamarac and cedar. From the 60th to the 73rd mile the exploration passes over a burnt country, with patches of green timber, undulating, with some gravelly ridges and light swamps. From the 73rd to the 102nd mile the country is generally undulating, with some low ridges of rock, some large timber —spruce, tamarac, cedar and occasional plantations of birch. From this point to the 108th mile we cross a burnt country, with small clumps of timber scattered through it. The soil for the most part is gravelly, and the ground undulating. From this point to Moose river the ground is rolling, being composed of alternate gravel ridges and swamps; timber mostly small pitch pine and poplar.

A fair line for railway construction can be located in the immediate vicinity of the line explored, but I am of opinion that a better line can be obtained by keeping to the westward of Sucker Lake; thence northward, crossing English river from one to three miles north of Long Lake; thence eastward, and crossing at the outlet of Shallow Current Lake; thence in a direct line to a branch of the Albany river. From near this river, Indians report a gravel ridge running the whole distance to New Brunswick House on the Moose river. In reference to the extent of arable land met with between the north end of Long Lake and Moose river along the line of exploration, I am of opinion that the belt in which good land is found does not extend much more than sixty miles northward from the Height of Land; but Dr. Bell, in his Geological Report of 1877-8, says, "After passing the 'swampy grounds,' north of Missinaibi Lake, the traveller cannot fail to be struck by the abundance and general fertility of the soil exposed on the banks of the Missinaibi and Moose rivers, all the way to Moose Factory. I examined the country for a mile or two back of the river in several places, for the purpose of ascertaining the nature of the soil, and found it excellent in all cases, but tending to become more swampy in receding from the river in the region below the Long Portage." From this it would appear that the fertile soil in the vicinity of the rivers is not confined to the sixty mile belt north of the Height of Land. In a report made of a survey from the Missinaibi and Moose rivers eastward, during the summer of 1871, I called your attention to the extent and general fertility of soil met with. This examination and survey was made at a season when the vegetation is at its best; it was its luxuriance, together with the size and abundance of the timber, which first called our attention to the soil. It was from the general similarity of the country passed over, during the exploratory survey of last winter to the above region, that led us to infer the fertility of the soil. A considerable extent of it is found around Long Lake, on both the eastern and western shores. From the eastern shore of the lake along the line of exploration, the fertile soil, gravel ridges and swampy ground appears to be about equally divided for the first forty miles. From the 40th mile to the 60th, from the 70th to the 95th, and from the 120th, fertile soil appears to predominate. It is in these belts that the rivers are found, in the vicinity of which the soil is good. Owing to the peculiar circumstances in which we were placed, our examination of the country only extended from five to ten miles on either side of the explored line. Comparing the country along those rivers with that along the Missinaibi (branch of) Moose river, from their similarity, I would infer that the soil would be the same in character and extent. Considerable tracts of clay land were met with, similar to that at the Hudson's Bay Company's Post on Long Lake, where vegetables, coarse grain and timothy are successfully grown. On the river bottom, spruce, tamarac and cedar timber abound, the largest ranging from one to three and a-half feet in diameter. A considerable area of burnt country was passed through. In the winter we had no means of judging of the soil, excepting that the fact of its having been burnt over, would lead to the conclusion that it was dry, probably a sandy loam. As I have observed, that soil predominates in burnt districts, and although not to be classed with the clay soils, it produces legumenous plants and the clovers in abundance when brought under proper cultivation. In conclusion, I heartily agree with Dr. Bell, who says in Report to above, "I have no doubt that at some future time this territory will support a large population."

Respectfully submitted.

I have the honour to be, sir,

Your most obedient and humble servant,

C. H. GAMSBY.

SANDFORD FLEMING, C.M.G.,
Engineer-in-Chief, Canadian Pacific Railway.

September 2nd.—This being Sunday and the canoe requiring to be repaired, and our clothes and blankets to be dried, we were glad of a day's rest.

I had hoped to have been able to procure a few potatoes here, but was sorry to find that the crop, owing to the cold, wet spring, and the undrained clay-soil on which they had been planted, was a complete failure. After living for three months on salt pork, with hardly any vegetable food worth mentioning, excepting flour, there is a craving for what may be called green vegetables, roots and fruits, and those who do not care for such at other times and under other circumstances, relish them greatly. This indicates a want in the system not supplied by a bread and pork diet. The hint thus given by nature should not be neglected, for long before the voyageur is prostrated with scurvy his constitution and health are likely to suffer.

Mr. Sanders has been a canoe-builder for the Hudson's Bay Company for many years, indeed I think he said that he had served the company in that capacity for thirty-five years. For a long time, and until the last two years, he lived at Flying Post, which is about ninety or one hundred miles north-east of Brunswick. He has had twenty children by his wife, who is still living. Of this fine family seventeen or eighteen survive, about one-half of whom remain with their parents. Their object in coming here was to farm or cultivate the land during the summer, and trap for furs during the winter. The chief reason for selecting this particular spot, was that there were a couple of dwelling houses, storehouse and stable already on the ground, and several acres of land cleared. These were no longer required by the Hudson's Bay Company, the business having been removed to Missinaibi, and the officer in charge of the district was willing that they should occupy the premises, which otherwise would doubtless have been burnt down in a few years. With these advantages, however, the place has many drawbacks. In addition to its complete isolation, and the absence of a market for any surplus produce they may raise, there is the difficulty of getting seed, stock, and agricultural implements. All of these have at present to be brought by canoe from Michipicoten, a distance of not less than 150 miles. But above all, I fear the greatest obstacle to their success is, that none of the family have had any opportunity of acquiring a knowledge of farming, a knowledge which is especially necessary when the soil is a clay-loam like that they have here. See my Report for 1879-80, p. 9, and Report for 1881-2, p. 9, for further information in reference to this post.

FROM NEW BRUNSWICK TO MICHIPICOTEN, LAKE SUPERIOR.

September 3rd.—Everything being ready, we bade good-bye to Mr. Sanders and his family, and started on our homeward journey early this morning. Three hours and a half took us to the portage near the south-eastern extremity of the lake. This makes the distance probably about twelve miles. We have here on this lake a few red pine, the first met with travelling south and the last when going north on this route. Crossing the portage, which is about a mile long, we embarked once more on the Missinaibi river. In the stretch of the river commencing where we left it, at the junction of Brunswick river and terminating here, there are two or three rapids, but at these it is not necessary to make portages. It is now about two chains in width, generally of good depth, with a steady current. Extensive alluvial flats of land on the west side of the lake and on both sides of the river, which will some day be converted into fine meadows. Clays, all calcareous, are seen in the banks. In some places the clay is overlaid with sands or sandy-loam, but I think it more frequently forms the surface soil also. Very few stones or rocks are seen on the river now. The timber is mostly spruce-tamarac, with a mixture of poplar, aspen, birch and balsam. Cedar is now seen more frequently.

We reached the Thundering Falls in the evening, and camped at the upper end of the portage, which is sometimes called St. Paul's Portage. This portage is about 200 yards in length, and the fall, by Dr. Bell's measurement, is twenty feet.

September 4th.—Breakfasted and started 6.35 a.m. Barometer low—28.7—and threatening rain.

The banks of the river rise rather suddenly a short distance below the last portage, and now frequently attain an elevation of fifty feet. Land-slides are seen occasionally, and where thus exposed we find boulder or drift clays in the lower part, and overlaying these clays fine yellowish sand of irregular thickness, but sometimes as much as thirty feet. About two hours, exclusive of stoppages, sufficed to take us to the next portage, which is called "Split Rock," or St. Peter's Portage. The former is appropriate, as the river (usually two chains, or say 132 feet in width) here rushes through a chasm in the solid rock some twelve feet only in width. The fall here is probably about thirty feet, and the length of the portage 350 yards.

At the upper end of this portage I observed a tree on which was marked, "Poulin's Crossing, July 28, 1880," and below that "J. Galbraith, June 29th, 1881." The latter is the well-known and popular Professor of Civil Engineering in the Toronto University. The former, Mr. Poulin, was in charge of a party engaged in running an exploratory line for the Canada Pacific Railway, which I think it a great pity the Dominion Government did not insist upon being followed by the Syndicate, as it borders on, if not passes through, a section of country better adapted probably for settlement than any other north of the Height of Land, and much superior in that respect, as well as in an engineering point of view, to the line that has been finally located. It might have taken a little more time to make, but would have really cost much less. I have already quoted from the Report of Mr. Gamsby, the engineer in charge, to show the character of the country adjacent to their line from Long Lake to this crossing, and it may not be out of place now, again to quote from his Report what is therein stated in reference to the character of country lying to the westward of this crossing.

Under the head, "Report on Survey from Moose River, running eastward, to Lake Matagama," Mr. Gamsby reports as follows:

OTTAWA,
December 13th, 1880.

SIR,—I have the honour to report that, in conformity with your instructions of July 3rd, requesting me to proceed to Moose river, the eastern end of my exploration of last winter, and continue a compass line eastward to a junction line with Mr. Austin, who was proceeding west from Sturgeon river, I left Collingwood on the 8th July, and after experiencing some difficulty in procuring means of transport up the Michipicoten river, we reached our initial point on the 27th of the same month, and commenced operations, in accordance with those instructions, by running a compass line from the point above referred to, in a general south-east course, carefully noting the courses and chaining the distances, and obtaining such other information as the limited time at our disposal permitted. We reached the 116th mile of the exploration on the 9th October ult. Having arranged with Mr. Austin to make the connection between our lines and otherwise complete the exploration, I started on my return, following and traversing the canoe route between Matagama and Flying Post. This route is at some considerable distance south of the explored line, and its traverse enables us to lay down a number of lakes in our plan, the position of which will very materially affect the projected location of a railway line. It will facilitate the description of the soil, timber and general character of the country explored, to divide it into several sections, as naturally divided by the larger streams flowing through it.

Section 1—Lies between the Moose and Kapaskasi rivers, and covers a distance of thirty-two miles along the line of exploration.

Section 2—Lies between the Kapaskasi and Nestodjiastona rivers, a distance of twenty-two miles.

Section 3—Lies between the Nestodjiastona and Ground Hog rivers, a distance of some sixteen miles.

Section 4—Lies between Ground Hog and Matagama rivers, a distance of forty-four miles.

In each of these sections the soil and general characteristics are different; the surface of the ground varying from lightly undulating to high ridges and broken, the soil varying from the clay and clay-loam of the first section, to the light sand of the fourth.

Section 1.—This section of thirty-two miles in length, and probably from thirty to sixty miles in width, from north to south, is lightly undulating, with gradual rise eastward. The soil is clayey-loam, or greyish mud mixed with vegetable mould. It is identical with the soil in the vicinity of the Hudson's Bay Post, called New Brunswick House, where the agent informed me that fine crops of coarse grains and roots were grown during the past season. Fully seventy per cent. of the soil of this section may be classed as very good. The remaining thirty per cent. is composed of inferior lands, gravel ridges and muskeg. Timber (birch, poplar, cedar, spruce and tamarac) is found in abundance, and in many localities of large size; the cedars are particularly fine. The other varieties will furnish large quantities of fuel when required.

Section 2.—This section, of twenty-two miles in length, is apparently of less width than section one. Broken and high ridges occur on which granite rock crops out. The clay and marl soil occurs only in belts, and is replaced by sandy loam, mixed with boulders. Probably fifty per cent. of the soil of this section would rank as good. The remaining portion, although not worthless, would be classed as inferior. A large portion of this section has been burned over; timber will be found only in the swamps on these portions. In the unburned portions a moderate quantity of white pine of fair size is found, mixed with the varieties prevailing on section one. No muskeg of any size occurs in this section.

Section 3.—This section, of about sixteen miles, has a fair proportion of clay soil, extending from the Nestodjiastona river, about four miles in a south-easterly direction to the Pishganagamee river. From the latter river to the end of the section the soil becomes sandy, with boulders, and although classed as inferior, I found fine crops of barley growing at the Hudson's Bay Company's Flying Post on Ground Hog Lake. The barley was stored at the time of my first visit, viz., September 15th. The potato vines had been touched with frost about that time, but were not killed till later on in the season. The timber of this section is very similar to that of section one, except that red pine takes the place of the spruce. Considerable quantities of red and white pine of good size are found throughout the whole of this section.

Section 4.—This section lies between the Ground Hog and Matagama rivers, a distance of forty-four miles along the explored line. It is much higher and more broken than the other sections. Considerable rock is met with on the higher ridges and around the lake shores. The soil is sandy-loam and boulders, and may be classed as inferior. Barley and oats of an inferior quality were grown at the Hudson's Bay Post on Matagama Lake. I think the poor quality of grain was owing to poor cultivation and the exhausted condition of the soil, rather than to any natural sterility. There is a great abundance of red pine growing on this section. It is tall, straight and sound, varying from four to fourteen inches in diameter; probably not up to the standard of lumber for exportation, but of great value for local and domestic uses. The numerous lakes and streams will afford an easy means of moving the raw material to points where water-power may be found for its manufacture. Means of transportation being furnished, there will spring up a large and increasing trade in the products of the forests between this section of the country and the prairies of the North-West. In considering the adaptability of this country for railway construction it will be necessary to divide it into two sections.

Section I.—From Moose river to Ground Hog river, a distance of seventy miles. A good alignment may be obtained in the immediate vicinity of the explored line. No exceptionally sharp curves will be required. The gradients for the most part will be light; any gradient heavier than one foot per 100 feet will be short, and, I think, need not exceed 1.25 feet per 100 feet or 66 feet per mile. The work I should classify as light to medium, with very little solid rock.

Section II.—From Ground Hog river to the Matagama river, a distance of forty-four miles, will require a careful examination with levels to determine the best location. If possible, the line should be placed further south than the explored line, in order to reach the south-west branch of the Matagama river, down the valley of which a good line may be found. Sharper curves and heavier gradients will be required on this section. The work will rank from medium to heavy, with some solid rock. The muskegs are not of a serious character, and are of small extent. As we cross seven distinct branches of the Moose river, considerable bridging will be required, but by careful selection of crossings, I think that not more than two spans of 100 feet each will be required over any of the streams.

All of which is respectfully submitted.

I have the honour to be, sir,

Your most obedient servant,

C. H. GAMSBY,

Engineer-in-Charge.

To Collingwood Schreiber,

Engineer-in-Chief.

Leaving the Split-rock or St. Peter's Portage, we encountered frequent rapids, and at one called "the Calf" we had to make a demi-charge, a portage, however, being necessary at this place when the water is high. I have found pieces of fossifferous limestone all the way from Long Portage to this point. They have never been long absent during any part of the route. Here they are not large but more than usually plentiful in the gravel at the lower end of the portage. The rock is still gneiss. It took us an hour and a quarter to get over the stretch from Split-rock to Calf Portage, and about two hours and a quarter from thence to Green Hill Portage. This is a mile in length, and the fall in the rapids is forty or forty-five feet. The land is dry and tolerably good on this portage. It is probably owing to the fresh, healthy verdure of the trees and bush that it owes its name. My voyageurs carried our baggage and supplies over the portage, but in view of the length of the portage and slippery state of the ground, it having come on to rain, they concluded to pole the canoe up the rapids. This they managed to do, after a long and hard struggle, in which my Toronto recruits, Messrs. Hamilton and Scott, are now able to take a very creditable part. To be able to pole well is of greater consequence on these rivers than simply to be a good paddler. Mr. Hamilton almost stumbled over a bear here—the first and only one seen on the trip. We camped for the night about two miles above this portage.

September 5th.—Barometer 29.

The land at our present camp is a good sandy-loam. Its elevation being not more than ten feet above the level of the water, it is no doubt flooded for a week or two in the spring, but only at that time. It bears a fine healthy growth of mixed forest-trees. I measured aspen fifty-two inches, spruce sixty inches, and tamarac thirty-six inches in circumference. Black ash is also more common but not large.

Soon after we had started we came to Wavy Rapid and Portage, whereat we only made a demi-charge. Portage 150 yards in length and fall about six feet. In twenty-five minutes more we came to an island and rapid where another portage called Island Portage, a quarter of a mile in length, had to be made. The fall here is considerable—probably twenty-five or thirty feet.

Rock, massive gneiss—a good deal like granite. As we proceed the land now becomes lower, wetter, and more swampy. The timber is mostly tamarac, spruce and cedar of small size. On the dry, sandy soils, for some time past, more or less Banksian pine has been seen, but no white or red pine. In a mile and a half, or two miles, we come to a rapid which again demands the vigorous use of poles to ascend. This is succeeded at short intervals, by two or three other rapids, at the last of which there is a portage called The Foot of the Swampy Ground Portage. Here we met with Mr. Sanders' sons and several Indians returning from Michipicoten with a large canoe laden with their winter supplies. Among them were James Sanders and Jonah, both of whom had been with me at different times as guides. They promptly took our line and hauled our canoe and its load up the rapid, thus saving us a good deal of time. It was twelve o'clock when we got away from here, and shortly thereafter we entered what is called "The Lower Swampy Ground." As observed in a former report, these swampy grounds have been in all probability at one time lakes which are now partially drained. From where we enter this Lower Swampy Ground to where we leave it and re-enter the river will be nearly six miles. About three miles more brought us to a portage, at the upper end of which we camped for the night.

September 6th.—Started at 5.55 a.m., and at 6.40 arrived at Smallboy's Rapid and Portage. Fall about six feet, and length of the portage about 200 yards. Here I found many pieces of fossiliferous limestone, and a piece of dark-holed or spotted quartzite, which I believe must have come from James' Bay.

By the time everything had been got over the portage and breakfast taken, it was 8.30. Two rapids were met with in the next half-hour, and at the top of the last we passed a brook on the right called Nottawainse, and a few minutes later a small stream on the left or east side, the route taken by small canoes to Flying Post, and which I ascended in 1881. In another half hour, during which we had to contend with strong rapids, we again came to smooth water and entered the Upper Swampy Ground. About 11 a.m., or say in four miles, we had again left the Upper Swampy Ground and arrived at the first rapid and portage in the river above it. This rapid was poled up, and in half an hour was followed by another rapid, which was also poled up successfully. If the water in the river had been high it would have been necessary to make portages not only at these, but several other rapids which have been passed. We were now near Lake Missinaibi, and three-quarters of an hour's paddling sufficed to take us to the Hudson Bay Company's Post, where we were very kindly received and entertained by Mr. Wilson, the officer in charge.

When we left camp this morning the weather was fine and cool, but the thermometer was so low, that even making allowance for the height above the level of the sea, I was surprised, and began to think something had gone wrong with the instrument. It was right enough, however, for it came on rain before noon, and by two or three o'clock it was very wet. We were too glad, therefore, to accept of Mr. Wilson's hospitality and remain until morning. This will be the first night that we have slept in a house since we left Red Rock, three months ago.

September 7th.—Barometer 29.

We left the guide, Richard, who had come with us from Moose Factory, at this post, to return with Mr. Spencer, who had arrived here some four days before us. As Mr. Spencer left Moose Factory a day before us, and we had, with the exception of one half-day, refrained from voyaging on Sunday, as well as gone somewhat out of our way to call at New Brunswick, and as in addition to all this, frequent stoppages were made to enable me to examine the rocks, soil, timber, etc., I think my crew have held their own very fairly. In view of the long time we have taken it is satisfactory to have some standard to judge, and be judged by, and to know that my voyageurs, two of whom were, I may say, amateurs, have not been in any way responsible for it. Mr. Spencer's guide, "Smallboy," is considered the best at Moose Factory, and his crew was a strong one, composed entirely of experienced voyageurs. What has delayed both parties is simply the shallowness of the water, which sometimes renders both branches of Moose river almost unnavigable for large and at all heavily laden canoes.

For their food and the hope of a small present, two natives, named Mongoose and Guido, who were going to Michipicoten for their outfit, agreed to accompany us in their own canoes to supply the want of a guide and assist us on the portages. This and other arrangements completed, we took leave of Mr. Wilson and left Missinaibi Post at nine o'clock. It took us about six hours to the first portage, and as we had a fair wind most of the way, the length of the lake between these points will be, I think, about twenty-two miles. This Missinaibi portage is 350 yards long and terminates at a lake called Crooked Lake, which is some fifteen feet only higher than Missinaibi. We do not see the point where the water of the former flows into the latter; but the water does flow into Lake Missinaibi. Having crossed the portage and embarked on Crooked Lake we proceeded about three miles further and camped for the night.

September 8th.—Barometer 29.

Starting at 5.42, a.m., and pursuing our way through a rather barren-looking country we reached the Height of Land portage at eight a.m. This stretch together with that made last night, makes the length of Crooked Lake, from portage to portage, roughly estimated about ten miles. This portage is some 200 yards in length and terminates at Dog Lake. Dog Lake is only a few feet lower than Crooked Lake, a difference which is probably still less in spring when the water is at its height. I should not be surprised if at that season Crooked Lake discharged part of its water into Dog Lake, and thence by Michipicoten River into Lake Superior, and another part as at present into Lake Missinaibi and thence into James' Bay.

Embarking on Dog Lake and pursuing a general course of W. S. W., we came in two hours to the point where the line of the Canada Pacific Railway crosses Dog Lake, which is here apparently narrow with islands in the channel. This will be about six miles from the Height of Land portage, and is said to be sixty miles from the mouth of Michipicoten River, the nearest point on Lake Superior at which supplies and materials for construction can be laid down by steamer. A little further on was the camp of Mr. Carry, the engineer in charge of the survey. In the party were several friends from Sault Ste. Marie, by whom we were cordially greeted, and from whom we were glad to obtain some tidings of home and of the outer world, however trifling. Mr. Carry was not at the camp, having gone to Michipicoten on business. A young gentleman of the party informed me in answer to an enquiry as to the elevation of Dog Lake, that Mr. McLennan, C.E., had made it he believed 1,025 feet above the "datum line" of the C. P. R., which is, I presume the level of the sea. This is, in all probability, approximately correct. In my Report for 1880-81, p. 5, the height of this lake is represented as being 554 feet above Lake Superior, or 1,152 feet above the level of the sea, on the authority of a map then in my possession; but my own barometrical observations agree more nearly with the lower elevation, as estimated by Mr. McLennan. Having stopped here about a quarter of an hour, we again resumed our journey which leads us still in a west-south-westerly direction. This changes to north-west in a mile and a-half, when the lake opens out, and the scenery becomes bolder than any we have met with since we left Lake Nipigon. This lake gives off long arms in various directions, and hills which I take to be three or four hundred feet in height above the level of the lake may be seen. The most extensive view of this lake obtained on the route followed by our guide, is in the neighbourhood of Waboose Island. About quarter to six we came to the outlet of the lake, our course having been south-westerly for the last two hours. We had barely entered the river (Michipicoten) when the first portage (Little Stony) occurs. It is on the right and only fifty yards in length. The fall which renders this portage necessary is about eight feet. From the time occupied, I estimate the distance from the Height of Land portage to Little Stony portage at about twenty miles.

I saw no good land on either Crooked or Dog Lakes; but have no doubt here and there limited areas may be found. Much of the timber has been destroyed by fire. Aspen, birch, tamarac, spruce and balsam are the most common. A few red pine are seen on Missinaibi, Crooked and Dog Lakes. White pine is met with on Crooked and also on this lake, but in small quantity only, so far as can be seen on the canoe route.

About two hundred yards below the last portage we arrived at what is called Big Stony portage, and as this is a mile in length we camped here for the night. The portage is on the left-hand side, as we descend the river.

September 9th.—Big Stony portage terminates at a lake called Manitoic, the bearing of which is between S.W. and W. S.W. It is, I should say nearly twelve miles in length, and in my opinion one of the prettiest lakes on the north shore. Where not burnt, there is a fair sprinkling of white pine, with all the other trees usually met with on the lakes and rivers in the north. At the outlet, the river is two chains wide, and in two miles it brings us to Pigeon portage, one quarter of a mile long, with a descent in the rapid of about seven feet. This portage is also on the left hand side.

Immediately below this portage we enter Whitefish Lake. This lake is narrow, rarely exceeding eight or ten chains in width, but four or five miles in length. In this lake we met Mr. Carry returning from Michipicoten to the line on Dog Lake, and while conversing with him and renewing an acquaintance of some twenty years ago, Mr. Spencer came along on his return to Moose Factory. Mr. Spencer had had, like ourselves, a very tedious and disagreeable trip, and having left his wife and family at Michipicoten, there to await the arrival of a steamer, was now hurrying back with all speed to reach his post. He was good enough to take a small parcel and some letters I wished to send to Moose. After a short parley we said good-by, and departed each on his several way. We, continuing our course down the lake, entered the river and camped about two miles below the outlet. In this last stretch of river we ran a rapid, where frequently a portage called French Portage is made.

September 10th.—On the right hand, or north side of the river, where our camp was situated, there is a flat of gravelly soil, on which there is an Indian burial ground. Above this rises a bank, fifty or sixty feet in height, of gravel and sand with many rounded and water-worn stones. I took this for a drift deposit, and searched diligently for some evidence in the shape of Devonian or Silurian rocks to satisfy myself on that point; but although I have found pieces of fossiliferous limestone at every stage of my trip from James' Bay over the Height of Land to this point, I could see nothing in these rounded stones and pebbles that I could identify. They seemed to be made up of the material or rocks found on the Height of Land itself, such as are met with on Missinaibi, Crooked and Dog Lakes. As far as my experience goes, although the debris of the eroded palæozoic rocks north of the Height of Land, even those on the coast of James' Bay can be found at short intervals from where they are "in situ" to the shore of Lake Superior, the proportion, or percentage, so to speak, becomes gradually less, as we advance southward until we reach the watershed. When we begin however, to descend the southern slope towards lakes Superior and Huron there is a sudden falling off and comparatively very few pieces of the fossiliferous limestone of the north can be found, and these most commonly small and often only the hardest and silicified pieces. A great erosion of the Huronian and Laurentian rocks on the Height of Land has occurred during the glacial epoch. That the immense quantity of material resulting from this erosion, should cause the limestones, sandstones and shales of James' Bay to form comparatively a very small proportion of the whole, and thus difficult to find, is therefore easily understood. But I think another cause that has contributed in no slight degree to this result is,—when these softer masses of Silurian and Devonian rocks came to be mixed with granite, and trap, and gneiss, torn from their beds on the Height of Land, and the whole promiscuous mass borne southward by some mysterious and irresistible power, as would then ensue in such a conflict of piece against piece and mass against mass, it is certain that the softer limestones and sandstones would be ground to powder and reduced to sand and clay and marl, few pieces of the original rock escaping and these only of the smallest and hardest. Pic River is the only exception I have met with, and there at the first fall and portage the limestone may be found in tolerable large pieces and in considerable quantity.

Started at 5.30 a.m. There was quite a sharp frost last night. Much hoar frost on the tents, grass and bushes. Ice nearly a quarter of an inch in thickness on water left in our tin cans. At 6.45 we came to Cat Portage on the left hand side, and one-third of a mile long. Crossing this and stopping for breakfast, it was nine o'clock when we again got under way. The river here forms a fine basin, nearly 300 yards in diameter immediately below this rapid.

Not quite a mile below the portage we pass high and precipitous cliffs, but, for the most part, covered with bushes and trees from bottom to top. The height is seemingly 250 feet, if not more. Two miles lower down we landed at the foot of a bank of drift-sand and gravel, with some stones, the whole about fifty feet in height and found, what appear to me, several pieces of limestone, and a piece of the holed or spotted dark quartzite, which I have almost always found associated with the limestone. The land is sandy or gravelly, and seemingly light and poor. The scenery, however, is very pretty, the cliffs before referred to continuing for some distance. The river is shallow, and current rapid but not broken, there being few, if any, large stones or boulders in the bed or channel.

Two hours and a-half, in the course of which we must, I think, have made eight miles, brought us to a portage on the right a quarter of a mile in length, with an estimated fall of ten feet. Crossing this, in two miles or less we came to the Long Portage. This portage varies in length from one and a-half to two miles, according to the point in the rapids at the lower end, where it is possible to embark safely, and which is determined by the height of the water. The whole afternoon was occupied in getting our things across this portage, and we camped for the night at the lower end.

September 11th.—From the lower end of Long Portage to Michipicoten Post, the navigation is unbroken. The river is very crooked, with, at present, a strong but shallow current. It varies in width from two to four chains. High banks of sand, gravel and cobble stones bound it generally on one, but sometimes on both sides. The soil is too light to be arable, but near the mouth of the river, at the Hudson's Bay Company's Post, very fair hay and root crops are grown.

Two hours brisk paddling took us to the Post, the distance following the bends of the river being probably about eight miles. The Hudson's Bay Company's Post, I may observe, is situated about half a mile from Lake Superior.

Mr. Bell, the officer in charge of this district, was absent, but from Mrs. Bell and from Messrs. Vennor and Spence, we received a kindly welcome and all the attention it was in their power to bestow.

Contractors, with large numbers of men, had commenced making roads, to take in supplies for the construction of the C.P.R., at the crossing on Dog Lake, and a sudden and great change had come over this hitherto quiet and secluded spot.

Here we awaited the arrival of the mail steamer, *Manitoba*, until the 15th, when we embarked for Sault Ste. Marie and reached our destination next morning.

Estimated Distances between the principal points visited in the course of our explorations this season, with the number of portages, and total mileage.

Route.	Number of Portages.	Distance in Miles.
From Red Rock to South Bay, Lake Nipigon	8	30
" S. Bay (Flat Rock Portage) to Nipigon House		35
" Nipigon House to mouth of Sturgeon River		32
" Mouth of Sturgeon R., L. Nipigon, to Long Lake House	23	93
" Long Lake House to Hon. Hudson's Bay Company's Post, Pic River	7	123
" H.B. Company's Post at Pic River to Long Lake House	18	123
" Long Lake House to English River Post	18	114
Excursions up Negaugaming and White Water Rivers		75
From English River Post to the Junction of Kenogami and Albany Rivers		60
" Junction of Kenogami and Albany Rivers to Albany Factory, James' Bay		130
" Albany Factory to Moose Factory		100
" Moose Factory to Michipicoten, Lake Superior, via New Brunswick	30	350
By canoe	104	1265

LAND.

Only those who have lived in old and densely populated countries are in a position fully to realize the intense desire that may be felt by landless multitudes for even a few acres of bog, or the almost insuperable difficulty of acquiring land whereon to build even the humblest dwelling. Those who have been born and brought up in this New World, where there has hitherto been enough of land for all who wanted it, and so much over, cannot easily conceive that in a few generations such a state of things not only *may*, but in all human probability *will*, prevail on this continent also. The natural laws which have governed and insured the increase and multiplication of the human race from the beginning until now, if not absolutely inexorable, have not hitherto, at least, been amenable to any considerations of prudence or morality. Nor do the resulting calamities, sometimes called "positive checks," which have been so powerful in retarding the increase of populations elsewhere, bear heavily as yet on us. Not that wars, pestilences and famines are unknown even on this continent, but so far they have passed lightly over us and laid an apparently cruel hand only on the native races. In our case, too, another important factor must be taken into consideration, namely, the increasingly large immigration from most of the already over-peopled countries of the Old World.

I simply call attention to these facts to sustain me in the position which I take, namely, that the day is not nearly so remote as many imagine, when the pressure of increasing population will be such, that the poorest land on this continent, if capable only of growing grass and potatoes, and of affording abundance of good wood and water, will be anxiously and eagerly sought for.

Belgium affords a striking example of what an intelligent and industrious people can make of even the poorest soil, when urged on by the pressure of increasing population. I take the following from Mr. Mill's "Political Economy," and although brought forward by him to illustrate the advantage of peasant proprietors, it is equally good as affording an example of what land, which we should probably set down as utterly worthless, is capable of becoming. In Book II. chapter vi., s. 5, Mr. Mill wrote as follows :

"But the most decisive example in opposition to the English prejudice against cultivation by peasant proprietors is in the case of Belgium. *The soil is originally one of the worst in Europe.* 'The Provinces,' says Mr. McCulloch, 'of West and East Flanders, and Hainault, form a far-stretching plain of which the luxuriant vegetation indicates the indefatigable care and labour bestowed upon its cultivation ; *for the natural soil consists almost wholly of barren sand*, and its great fertility is entirely the result of very skilful management and judicious application of various manures.' " And again a little further on Mr. Mill, quoting from a book on Flemish Husbandry, says: "that the Flemish agriculturists *seem to want nothing but space to work upon ;* whatever be the quality or texture of the soil, in time they will make it produce something. The sand in the Campine can be compared to nothing but the sands on the sea shore, which they probably were originally." After describing step by step the process of improvement, the writer concludes with the following: "After the land has been gradually brought into a good state, and is cultivated in a regular manner, there appears much less difference between the soils which have been originally good and those which have been made so by labour and industry. At least the crops in both appear more nearly alike at harvest, than is the case in soils of different qualities in other countries." Finally, near the end of this chapter, Mr. Mill, quoting from Arthur Young, a celebrated English agriculturist, says: "I know no way so sure of carrying tillage to a mountain top as by permitting the adjoining villagers to acquire it in property ; *in fact we see that in the mountains in Languedoc they have conveyed earth in baskets on their backs to form a soil where nature had denied it.*"

Again of the Engadine, a valley in the High Alps, Mr. H. D. Inglis, in his work on Switzerland, writes as follows : "There is not a foot of waste land in the Engadine, the lowest part of which is not much lower than the top of Snowden. Wherever grass will grow, there it is ; wherever a rock will bear a blade, verdure is seen upon it ; wherever an ear of rye will ripen, there it is to be found. Barley and oats have also their appropriate spots ; and wherever it is possible to ripen a little patch of wheat, the cultivation of it is attempted."

North of the watershed between our great lakes and James' Bay, Ontario is, under the award, entitled to some 40,000,000 acres of land. This vast wilderness includes numerous lakes, much swamp, and enormous tracts covered with peat-mosses, called muskegs by the natives. The proportion of bare rock is very small. With the exception of limited areas on the coast and rivers, the whole of the territory from James' Bay southward for nearly 150 miles is covered with peat-mosses, swamps, marshes and shallow lakes. The soil thus buried is a clay-marl, and is sufficiently high above the rivers to admit of the drainage and reclamation of much the greater portion of it. This will be probably the work of the second or third generation from now. On the watershed again there is another but much narrower belt. This is much broken, being made up of numerous lakes and ponds, with marshes, small muskegs and swamps, divided by low, rocky, gravelly and sandy ridges—the latter sometimes full of boulders. This is the character of the country at or about the watershed. On either side of that, but more generally on the north, tracts of poor, sandy land are frequently met with. This belt varies greatly in width, being in some places only a few miles and in others as much as fifty or sixty miles. Intermediate between this last and the "Muskego" region is a belt of better land—a belt which may be called, by comparison at least, "a fertile belt," and suitable, if opened up, for earlier settlement.

I had previously entertained the opinion that there was such a belt of better land, and I am glad to say that the explorations of the past season, although by no means conclusive as to its extent, confirm my belief in its existence. I have now crossed it on six different lines, viz., on the Abittibi, Mattagami, Ahkuckootish, Missinaibi, Kenogami and Albany Rivers. But when we consider that the distance between these extreme points is upwards of 400 miles, it would be folly to assert positively that this fertile belt is continuous throughout, or pretend definitely to lay down its boundaries. To the best of my judgment, however, the northern boundary of this belt, or the dividing line between it and the Muskego country, is but a little way north of Lake Abittibi on our eastern boundary. From thence, going westward, I should fix on or about the junction of Frederick River and the Abittibe River as the next point. On the Mattagami or south branch of the Moose, Sturgeon Falls may be said to be about the place where the muskegs fairly begin. On the Ahkuckootish or Ground-hog River, the change takes place about the lower end of Long Rapids, forty-eight miles or so north of Flying Post. The dividing line from thence would appear to take a course north of west, crossing the Missinaibi or north branch of the Moose, as nearly as I can guess (for it is little more than that) about twenty miles below the junction of Brunswick River. Still keeping a west north-westerly course I think it then crosses the Kenogami River about ten miles below the last or eighteenth portage.

From this point I cannot say with any degree of confidence what course the dividing line, as between the muskegs on the north, and this drier and more fertile belt on the south, really takes, but that the belt itself still extends a long way west of the Kenogami River I have little doubt. I am inclined to think that it will be found to strike the Albany about Lake Miminiska.

The southern boundary of this fertile belt is equally irregular, approaching at some points almost to the water-shed, and at others retiring to a distance of not less than forty or fifty miles north of it. It is bounded in this direction, of course, by the poor broken and swampy or sandy belt already alluded to as usually met with for some distance on both sides of the water-shed. Indeed, it is not likely that there is any well-marked line of demarcation between these two belts, but a gradual transition from one to the other.

Now, although I call this "the fertile belt" of this northern territory for the sake of distinction, I must not be understood to mean that all the land, or indeed, more than a small part of it, needs only to be broken up in order to produce grain. As in the Muskeg country to the north there are numerous tracts of arable land, so in this fertile belt may still be found many areas of muskeg and swamp, as well as much land that is unarable on account of its lightness or the stony nature of the soil.

If, as I hope, this tract of drier and more fertile land shall be found to extend across the territory from the eastern to the western boundary, it will be not less than 400 miles in length, and assuming the breadth to be on an average fifty miles (as I believe it is), we have in this belt not less than twenty thousand square miles, or twelve million eight hundred thousand acres of land.

Making every reasonable deduction for lakes, marshes, swamps, muskegs, and unarable land, a very large quantity will still remain, more or less fit for settlement. While there are smaller areas on which grain and root crops may be successfully cultivated, the far greater part of this fertile belt is, in my opinion, chiefly if not solely valuable for the excellent pasture it is capable of affording. Both the climate and the soil are favourable to a mixed system of husbandry ; but stock-raising and dairy-farming will be, I am persuaded, the most successful and productive branches.

One very marked natural feature which distinguishes this fertile belt from the Muskeg country lying to the north of it, is the general prevalence of timber or forests in the one, and the equally marked absence of forests, properly speaking, in the other. Of course, fires have stripped large areas in the fertile belt of its timber, and in the flat Muskeg country good trees may be found near the rivers and on alluvial islands, but this does not affect the general rule.

The Hudson Bay Company's Posts, at Abittibi, Flying Post, New Brunswick and Long Lake, are all situated within this belt. Mattawagamingue lies a little to the south of it. It is only at these Posts that any attempt has been made to cultivate the soil, and even there the agricultural operations have been of a very limited and, I may say, primitive nature. Such information as I have been able to obtain in regard to the crops has been given in previous reports. I shall only repeat here that wheat, oats, barley, beans, peas, potatoes, turnips, carrots, parsnips, onions, cabbages, and cauliflowers, etc., have all been successfully grown at one or other of these Posts ; that small fruits, such as raspberries, red currants and strawberries yield abundantly, and that both the soil and climate are particularly favourable to the growth of timothy, of clover, and doubtless of many other important grasses, the seed of which has not yet been introduced into the territory.

The cattle kept at the Posts in this fertile belt prove by their size, condition and general healthiness, the admirable fitness of the country for the raising and keeping of stock. More detailed information in reference to the climate and productions of this territory will be found in my first Report, 1879-80, to which I must respectfully refer.

I have only further to observe under this head that not only is the climate salubrious, and the soil reasonably fertile, but that the whole of this belt is exceedingly well-watered, and will afford the settler an ample supply of wood for fuel, fencing, and other necessary purposes. At the same time the land is not generally so heavily timbered, as to render clearing unusually laborious and expensive.

But with this, I wish it to be understood that even the so-called fertile land in this belt must be properly cultivated and cared for from the beginning. Those who expect to raise root and grain crops or even cultivated grasses without manure or the least regard to rotation of crops, or drainage, are not fitted for this country and had better go elsewhere. What this territory requires is farmers—*bona fide* farmers—men whose aim is rather to improve and increase the fertility of the soil than to impoverish and exhaust it. Those who simply rob the soil of its fertility and then leave it, or devolve on others the labour and expense of restoring it, are neither good farmers nor desirable citizens.

MINERALS.

The existence of beds of lignite coal, of iron ore, of gypsum and kaolin, and of veins containing copper and lead ores in this Disputed Territory has been mentioned in former reports.

While our explorations this season have not been very prolific in respect of the discovery of new minerals, they have not been altogether barren of results.

The finding of Magnetic iron ore of good quality *in situ* on Little-Long Lake may turn out to be of some economic importance. It is true that where found by us it is under the level of the water, but I am persuaded that had circumstances permitted us to make a more prolonged and careful search, we should probably have succeeded in discovering bodies of this ore in the vicinity, more favourably situated for working. Nor is it at all improbable that the water of this lake may be drained or lowered at a very moderate expense, so as to allow of the ore being worked where we have already discovered it. The geological formation is such as renders the occurrence of rich iron ores by no means unlikely, and the locality is not so remote or inaccessible as to forbid all hope of their being profitably worked, should they be found in sufficient quantity.

I have been able this season also to re-examine, under more favourable circumstances, the deposit of kaolin, or china-clay, discovered by me in 1880, on the Missinaibi River. I am glad to say that this clay exists there in very large, probably inexhaustible quantity. It is situated about six miles below Coal Brook, or Creek, and on the same (east) side of the river. The bed of clay, as seen in the bank when the water is low, would appear to be at least ten or twelve feet in thickness. Below it and above it are strata of beautiful white sand. The upper stratum of sand is of singular purity and upwards of twenty feet in thickness. The lower is somewhat coarser grained and has a slightly yellowish tint. The china-clay and these sands are distinctly traceable for half a mile, in length. The attitude of these beds appears to be nearly horizontal. The kaolin, as it appears in the bank, is in patches, some of which are white and others red. The red is impure, that colour being due to the presence of iron. I am inclined to think that its presence is altogether accidental, and confined to the out-crop. The great bulk of the clay will, I believe, be found to be a pure white china-clay, whenever the bed is properly uncovered and worked. Samples of this clay, examined by the late Professor Croft, were pronounced by him equal to English china-clay. Another sample, examined by Mr. Hoffman, of the Geological Survey, contained enough of iron to discolour it, and impair its value as a material for the manufacture of fine china. Both specimens were taken from the out-crop of the bed, and absolute purity from foreign matter could not be expected under such circumstances.

Should this clay prove, as I believe it will prove, suitable for the manufacture of china, associated as it is with the finest of sand for glass-making, and with beds of lignite coal and peat, this can hardly fail, I think, to be a point where manufactures of pottery and of glass will ultimately be established.

The existence of limestone, either *in situ* or in pieces, in the gravels and soils of this territory is of more than mere speculative interest. The sterility of soils which repose on granite, gneiss, and the older metamorphic and schistose rocks is not unfrequently owing to a *deficiency of lime.* The close attention I have given to this point, and the numerous references in my narrative to the presence of fossiliferous limestone, as well as of marls, in the surface soils is therefore of practical importance and value. It proves that in all this territory the areas, if any, must be very limited in the soil of which there is any deficiency of lime. On the contrary, it establishes the fact, that even where limestone does not exist "in place" as one of the rocks, calcareous matter is everywhere abundantly present in the soils or sub-soils, or both.

FISH.

The plateau which forms the Height of Land and extends many miles both north and south of the actual watershed, is a perfect network of lakes. The most considerable of these are Lake Nipigon, lying a short distance south, and Long Lake immediately north of the watershed. There are, however, hundreds of other lakes varying in size from fifty acres to fifty square miles. Nor are they confined to the Height of Land plateau between Lakes Huron and Superior, and James' Bay, for they are nearly, if not quite, as numerous west of Lake Superior, and in some parts of the country lying between the Georgian Bay and Ottawa Valley. In addition to those lakes which lie entirely within our Province, there are other lakes situated on the boundaries, and which are partly so. Such lakes for instance as Abittibi on our eastern boundary, and Rainy Lake, Lake of the Woods, Lac Seul or Lonely Lake, and Lake St. Joseph, on our southern and western boundaries.

These again are exclusive, entirely, of what we call our "great lakes," Superior, Huron, Erie and Ontario, one half of which, or more, properly belongs to the Province of Ontario. What may be the total area of the *submerged land*, or in other words, lakes included within the boundaries of the Province of Ontario, no one in the present state of our knowledge of the country can truly estimate. Of the great lakes alone, probably not less than 30,000 square miles are in Ontario. Assuming the area of all the other lakes in the Province (inclusive of the disputed territory), to be 20,000 square miles, and I am persuaded it is not less, we have 50,000 square miles of submerged land. Much of this will in the future be drained, and millions of acres of land reclaimed. More of it must remain forever covered with water and may be utilized partly for the purposes of navigation, and partly as affording wholesome food in the form of fish.

The great number of lakes, and the vast area, embraced within the limits of this Province, has been already adverted to. The people who assume these lakes to be valueless from a Provincial point of view, fall into the same error as those who contend that the land, minerals, timber and other resources of this territory are worthless; they take it for granted that the world is going to stand still! Mine is a different faith, I believe that this territory, hitherto so inaccessible, is on the eve of being opened up, and all its various resources developed. Now as regards fish, the larger lakes, more particularly Lake Nipigon, are capable of affording employment to many fishermen, and of yielding, at least for a time, considerable quantities of excellent fish without any particular care or attention. But in the future, when the art of fish-breeding and raising shall be as well understood and as systematically practised as cattle-breeding or the raising of poultry, I think the smaller lakes will be more valuable, and produce more fish in proportion to their area, than the larger ones. They will be much more manageable, so to speak, and thus afford a better opportunity for the exercise of the knowledge and skill which mankind have acquired, or may hereafter acquire, bearing on the successful practice of what is called "pisciculture" or fish culture. Left simply to the operation of natural laws, our lakes and rivers contain fish and "fishes," if I may be pardoned for using such an expression. By fish, I mean those kinds which obtain their nourishment from sources which *directly* contribute little or nothing toward the sustenance of man. For example, all those varieties of fish which feed upon insects, or the larvæ of insects, worms, snails, grubs, caterpillars, grasshoppers—upon mollusca or shellfish, or crawfish, and even on minnows, or other small fish, which however numerous, would be of little or no importance as food for man. I include under this head also all those kinds of fish, if there be such, as are vegetarians or herbivorous, drawing their subsistence, in whole or in part, from the grasses and plants growing on the submerged land or in the water itself.

By "fishes" I would be understood to mean predatory or carnivorous fishes, which live by devouring, for the most part, the other kinds of fish referred to above, namely, those which, while themselves good for food, consume nothing which man himself could or would eat.

Now, without having made a study of the subject, it appears to me that the aim of the fish-culturist should be to keep such kinds of fish, and such numbers of fish as will utilize all the fish food afforded by his pond or lake, preferring of course those kinds which will yield the largest return, in respect of quantity and quality of human food. On the other hand the predatory fishes, such as the pike should, it seems to me, *be entirely banished or excluded from the pond or lake, if possible.* The result of allowing such fishes to remain being, that although they may in due time themselves become the food of man, they will probably have consumed more than twenty times their weight of better fish, which but for them might also have become human food. This would be anything but true economy. We know pretty well how many pounds of corn it takes to make a pound of pork, or a pound of beef; but we are entirely in the dark, at least I am, as to how many pounds of herring or white fish are required to make a pound of pike—of dore or pickerel—or even of lake-trout. It is difficult to form even a conjecture on the subject, but I am inclined to think that in putting it at twenty times their own weight, I am very much below the truth. If this be so, those smaller lakes in respect of which an intelligent system of pisciculture can be adopted, will, as I have said, be more valuable and productive in proportion to their area, than the larger lakes. Fish-breeding can be carried on in the smaller lakes by private individuals. If favourably situated as regards drainage, inferior kinds of fish, such as the sucker, and the predatory fishes, such as the pike, can be weeded out, and only those which are in every respect desirable retained; or foreign stock might be imported and introduced, in some cases, with decided advantage. In the large lakes, where it is practically impossible to do this, there can be no scientific pisciculture in the proper sense of the term. Still much can be done to increase the produce even of the largest, by wise fishery laws or regulations; the object of which should be to aid and encourage the multiplication and increase of such fish as the whitefish, and to reduce as much as possible the numbers of the predatory fishes, of which the pike may be taken as a type.

The inadequacy (as it humbly appears to me) of our fishery laws may be inferred from the simple fact that not only the pike, but every other kind of predatory fish is actually protected, while the sturgeon, one of the most valuable of fresh-water fish, is, I believe, altogether unprotected.

The following extracts are taken from an interesting article on "Pisciculture," in Chambers's Encyclopedia:

"The Chinese have long bestowed more attention on pisciculture than any other nation, and with them it is truly a branch of economy, tending to the increase of the supply of food, and of the national wealth. * * * In some countries of modern Europe this branch of pisciculture is also prosecuted to a very considerable extent, particularly in Germany and Sweden, and of late years in France in order to the supply of fish for the market. In Britain it has never been systematically prosecuted. * * * In Germany, ponds carefully attended to, are found very productive and remunerative. There can be no doubt that in Britain, also, many a piece of land, at present very worthless, might easily be converted into a pond and be made to yield large quantities of excellent fish; but such a thing seems almost never to be thought of. * * * Modern pisciculture is the revival of an old art, well known to the ancient Italians, but which had fallen into abeyance for a number of centuries. The art of breeding and fattening fish was well known to the luxurious Romans. * * * The art had doubtless been borrowed from the ingenious Chinese, who are understood to have practised the art of collecting fish-eggs and nursing young fish from a very early period. Fish forms to the Chinese a most important article of diet, and from the extent of the water territory of China, and the quantities that can be cultivated, *it is very cheap.*" * * * After an interesting account of fish-hatching as pursued at Huningue, in France, the writer goes on to say: "The art of pisciculture has also been introduced into Ireland, at the fisheries of Loughs Mask and Carra by the Messrs. Ashworth, who have obtained excellent practical results from their enterprise. These loughs contain an area of water equal to *thirty-five acres*, and a communication with the sea having been opened, they now teem with salmon; and the proprietors are confident *that it is as easy and as profitable to cultivate salmon as sheep.*" This article concludes as follows: "There is no practical difficulty, it is said, in rendering an acre of water as productive as an acre of land."

If this be so now, or if as our knowledge of the art of fish-culture increases, there be the remotest probability of "an acre of water being rendered anything like as productive as an acre of land," how important and valuable must the 20,000 square miles or 12,800,000 acres of water (exclusive of the great lakes) included in the Province of Ontario be! How proper that every precaution should be taken to maintain the right of the people of the Province thereto as against all claimants.

OPENING UP THE COUNTRY.

In my first report (p. 40) I dwelt at some length on this subject. Although I have barely touched upon it since, it has never been absent from my mind in all my explorations and journeyings. The refusal of the Federal Government to regard the award of the arbitrators, and the uncertainty which has hitherto prevailed as to the route which might be finally adopted for the Canadian Pacific Railway, seemed to me to render any further suggestions premature, if not absolutely useless.

The Lake Superior section of the railway has now been for the most part located. I feel, therefore, in a better position to give an opinion as to what may be the proper mode of opening up the territory claimed by Ontario north of the Height of Land.

As the railway will not cross the watershed north of Lake Superior, the territory cannot be opened up to settlement without roads, the expense of making which must necessarily be borne by the Province. Of two or more plans therefore equally eligible in other respects, the one which is calculated to secure to the people of our own Province the largest share of the trade of this northern territory and of Hudson's Bay, should obviously be preferred.

Bearing this in mind and having due regard to efficiency and economy, the conclusion I have arrived at is, that in the absence of direct railway communication, which is not likely to be available for many years, the best route to the fertile belt I have described in this report, as well as to James' Bay, is by Long Lake.

The following appears to me the best plan to develop the resources of the country, and bid for a share in the trade of Hudson's Bay. My plan would be as follows: 1st. To make a road from Jackfish Bay, on Lake Superior, to Long Lake—22 miles. 2nd. To place a steam tug on Long Lake. 3rd. To make a road on the south-east side of the Kenogami River, commencing at the first rapid and portage below Long Lake, and terminating at the last or eighteenth portage—45 miles. 4th. To place another steam tug at the lower end of this eighteenth portage.

This is absolutely all that is necessary to open up a good route to the fertile belt north of Long Lake, which would be available the whole summer, and a good route also to and from James' Bay for the shorter period of, say six weeks. The total length of waggon road required is not more than sixty-seven miles. If the Government sees fit to make the road, private enterprise will soon supply all else that may be needed to complete the communication.

The distance by this route from Lake Superior to James' Bay will be about as follows:

	Miles.	
From Jackfish Bay, Lake Superior, to Long Lake............	22	road
" South end of Long Lake to first portage on Kenogami River (unbroken steam navigation)................	58	
" First portage to eighteenth portage on Kenogami River..	45	road
" Eighteenth portage on the Kenogami to Albany Factory James' Bay (unbroken steam navigation for six weeks in the spring)................................	250	
In all........................	375	miles.

The time required to make the trip from Lake Superior to James' Bay by this route' reckoning the speed to average six miles an hour on the road, and eight miles an hour on the lake and river, would be forty-nine and a-half hours, or in round numbers, two days only. The return trip would occupy a longer time, owing to the strength of the currents in the Albany and the upper stretch of the Kenogami River. Four or five days, however, should be amply sufficient even for the return trip.

Now, let us see, what may be the cost of the transportation of heavy freight, such as flour and pork, over this route. Assuming that there would be settlers on the roads glad to obtain occasional employment for themselves and teams, the hauling of pork and flour sixty-seven miles on a reasonably good road should not, under any circumstances, cost more than $10 per ton. Nor should the freight by steamers on Long Lake and the Kenogami and Albany Rivers, 308 miles with only one break, exceed another $10 per ton. If these rates be sufficient, and I am persuaded that they are ample, the transportation of provisions or heavy goods from Lake Superior to Albany Factory, on James' Bay, by this route need not exceed $20 per ton, and less, of course, to intermediate points. With back-freights from Hudson's Bay to Lake Superior, and steady employment, the cost of transport might be very greatly reduced.

As stated in my Report for 1879-80, p. 41, "the cost of transporting goods from Toronto or Hamilton to Moose Factory (by canoes), either via Temiscamingue and the

Upper Ottawa, or by Michipicoten and Moose River, would not probably be less than $150 to $200 per ton." The only alternative which at that time suggested itself to my mind was the ocean route, via Hudson's Straits. This may be, and indeed is, of vital importance, so far as the direct trade between that portion of our territory bordering on James' Bay and the Mother Country, is concerned. But, as a means of communication between the populous and older settled parts of our own Province and this territory, I am decidedly of opinion that pending the construction of a railway direct from Lakes Huron or Superior to James' Bay, the route by Long Lake is, in some most important respects, much the best.

Among other advantages offered by this route the following may be specified, namely:

1st. The smallness of the outlay required, and the shortness of the time needed, for the completion of this route.

2nd. The length and superiority of the water stretches as compared with those on any other route.

3rd. The shortness of the roads required to complete the communication from Lake Superior to Hudson's Bay, as compared with any other route.

4th. The cheapness of transport resulting from the shortness of the land-carriage, and the favourable nature of the navigation afforded by Long Lake, the Kenogami or English River, and the Albany River.

5th. It will be the means of opening up a country, hitherto shrouded in a very considerable degree of darkness, and enable us to obtain full and reliable information in reference to its people and its resources.

6th. It will be the first step towards the inauguration of a direct trade between the merchants and manufacturers of Ontario and Hudson's Bay.

7th. It will confer a boon on the natives and others of this vast territory, the importance and value of which it is impossible to exaggerate. Among other blessings that may be confidently looked for will be a much greater abundance and cheapness of the necessaries of life, of food more particularly.

Thus much for the advantages of this route as a means of communication between Lake Superior and James' Bay. But there are other benefits which will be obtained by and from it, as regards the intermediate territory, namely:

1st. It will open up to settlement the fertile belt north of Long Lake, and the richer but more limited tracts of alluvial land on the Kenogami River and its tributaries.

2nd. It will develop and make available the mineral and timber resources of an extensive country around Long Lake, Little-Long Lake, and Manitounamaig.

3rd. The termini of this route are so situated as to afford settlers and others in the country it passes through, *alternative and competitive modes of transport.* The cattle, horses, butter, and cheese, which will, in all probability, be the chief agricultural products of the territory, may, when they reach Jackfish Bay, be sent eastward either by rail or water. Or before long perhaps these products for which the teeming population of the Mother Country affords such an excellent market, might be transported over this route to James' Bay, and thence shipped direct to England. It is, of course, to be regretted that from the eighteenth portage on the Kenogami River to James' Bay, navigation by steamboats is only possible in the spring and early summer, when the water is always high and of sufficient depth to float such steamers as ply on the Upper Mississippi and Missouri Rivers. It is probable that in some seasons the Albany and Kenogami may also admit of a short period of navigation after the autumn rains, which are sometimes very heavy. But even supposing the period of navigation shorter than I believe it to be, this route will still be of inestimable value as a means of communication, until the resources and trade of Hudson's Bay and the intermediate territory are so far developed as to warrant the construction of railways.

Another point at which this fertile belt of country may be easily tapped, and an intermediate section of our Province, of great extent and large possibilities, at the same time opened up and developed, is at Red Rock, Nipigon Bay. Here, also, the settlers will have the choice of two different modes of conveyance, either steamboat or railway. A waggon road, twenty-five miles in length, built from this point to South Bay, Lake Nipigon, would at once open up to settlement very large tracts of land, lying to the north and west of the lake. Lake Nipigon is a much larger lake than Lake Nipissing, measuring as it does, according to Dr. Bell's survey, seventy miles in length and fifty miles in breadth, with a coast line of more than 580 miles. My route was through a part of the lake where little good land is to be seen, and I was, as I have said, somewhat disappointed with what I saw of it. But, in 1881, I noticed a fertile belt of land to the south of Lac Seul or Lonely Lake. At first it appeared in irregular patches, but in the vicinity of Lake Wabigoon it became more general. It struck me at that time as probable that this belt might extend eastward for some considerable distance in the direction of Lake Nipigon. Now, Dr. Bell says (Report of Progress of 1869): "In the Nipigon country the largest tract of good land appears to lie on the south-western side of the lake. From the Nonwatan River northward to the Pajitchigama, a distance of fifty miles, the country is comparatively level, and soil generally fertile; but we could not ascertain from our own explorations how far westward this tract extends. *The Indians and others, however, represent it as continuing nearly to the Winnipeg River*, and becoming more generally level in receding from Lake Nipigon." I cannot, therefore, help thinking that there may be some foundation for this statement of the Indians, and that possibly, if not probably, there will be found to be a very large area of moderately fertile land situated to the westward of Lake Nipigon and extending to Lake Wabigoon, nearly 150 miles distant. Dr. Bell has mentioned a number of other localities where he met with good land on this lake, and among others Windigo's Bay, at the north-western and Ombabika Bay at the north-eastern extremity of the lake. Of the former he says: "From Kawabatongwa River to the Pickitigouching, the country is low near the lake, and a level tract extends northward to an unknown distance from Windigo's Bay. It is believed that in this direction a large area is overspread with light-coloured clay." And of the latter Dr. Bell says: "It has been already mentioned that the country is level, and the soil good, all along the north-east side of Ombabika Bay, and at least as far back from it, in a north-easterly direction, as the eye can reach." Now, as the water-shed is but a short distance north of Lake Nipigon, it is probable that this tract of good land described by Dr. Bell as extending in a northerly and north-easterly direction, an unknown distance from Wendigo's and Ombabika Bays, may be almost, if not quite, continuous with the "fertile belt," north of the watershed, and supposed to extend almost unbroken from the Abittibi to the Albany River. If so, the construction of this road from Red Rock to South Bay is the first grand step toward the opening up and development, not only of Lake Nipigon, with its varied and promising resources, but of the fertile belt in the territory immediately beyond the Height of Land.

As a route to James' Bay, this cannot compare, in my opinion, with that by Long Lake, the Upper Albany being far from navigable in any reasonable sense of the term. But this road will let daylight into this part of the country also, and with it explorers, lumbermen, fishermen, and travellers by scores, who will soon discover and make its resources generally known, thus promoting the speedy development and the settlement of what may prove a most important and valuable section of this Province. I feel safe in saying that the cost of this road would be returned many fold to the Treasury within a very few years after it is completed. Although I do not think there is much, if any, white or red pine on the east side of Lake Nipigon, I should not be at all surprised if this valuable timber were found growing, even in considerable quantity, at no great distance to the westward. And undoubtedly there must be a a great deal of timber, suitable for railway ties, telegraph poles, and such like, the timber dues on which will go to swell the revenues of the Province.

As soon as the Lake Superior section of the Canadian Pacific Railway is completed, the fertile belt lying east and west of the Missinaibi River, including the Hudson Bay Company's Post, at New Brunswick, can be opened up for settlement by improving the water-ways and constructing roads to communicate with the railway at Dog Lake and other suitable points. In the meantime, however, I think it may be advisable to postpone other work, having this object in view, until the Long Lake route is completed. I may state, however, for the information of the Government, when the time to open up and develop this part also of our territory shall have arrived, that from the point where the C.P.R. crosses Dog Lake to the first portage on the Missinaibi River, a distance of about forty miles, there is very good water navigation, broken only by two short portages. The first is between Dog Lake and Crooked Lake, and not more than 200 yards in length. The second is between Crooked Lake and Lake Missinaibi, and about 350 yards in length. These lakes are so nearly on a level, and the distance between them is so short, that the navigation might be made continuous, in my opinion, at a very trifling expense. Thus when the railway is finished the territory should be easily and cheaply accessible to a point nearly 100 miles from Michipicoten, on Lake Superior. A road from the first portage on the Missinaibi, some thirty miles in length, would reach New Brunswick Lake and tap the northern fertile belt at this point also. Should the C.P.R., between Sudbury Junction and Dog Lake, touch Lake Winnibeegon, the principal source of Mississagua River, the fertile belt can again be judiciously "tapped" by a road extending northward. This section of the railway, however, has not, so far as known to me, been yet located. The Abittibi district can, I think, be most cheaply and efficiently opened up by way of Lake Temiscamingue. But as Lake Temiscamingue itself is not as yet reached by rail, it is needless to say more on this subject at present.

Under this head I may be expected to say something in reference to the navigation of the Hudson's Bay, in which so deep an interest is felt by many persons in this Province, as well as in the North-West. My own explorations, however, having extended no farther north than Charlton Island, nor along the coast more than about 100 miles east and west of Moose Factory, I have really had but a poor opportunity of forming opinions from my own observations. This is a subject, too, on which the Hudson Bay Company's officers are more than usually reticent, influenced, as they probably are, by the fear that the opening up of the country will be injurious to the interests of the company, if not also to their own. I have, therefore, neither asked nor obtained much information from them.

While I am of opinion that James' Bay, owing partly to its shallowness, freezes in all probability entirely over in the winter, I do not think that the main Hudson's Bay freezes or continues frozen for any length of time. It may do so in sheltered bays and in the channel between the east main coast and the chain of islands, which for a great distance runs parallel to it; and there may be, also, in many places, a wide belt of shore-ice of great thickness, but I am decidedly of opinion that the main body of the bay remains open all winter.

When in spring the ice breaks up on James' Bay, it is doubtless the central field that moves out into the main Hudson's Bay first, and there this field-ice will be soon broken up into pieces by the action of the swell and waves. The ice although thus broken up continues, in all probability, both heavy enough and hard enough to impede, if not entirely stop, the progress of sailing vessels, wherever it may be met with between James' Bay and the Straits. The shore-ice and that of the smaller and more sheltered bays will not probably break up and leave for a week or two after the other, much depending on the weather and the height of the tides, as well as the direction of the wind. This ice when met with, if at all "closely packed," would, I suspect, even more effectually obstruct the progress of a sailing ship or a side-wheel steamer, than even the thinner field-ice. Indeed, ice of very moderate thickness, such as forms on the sheltered bays around Lake Superior or Lake Huron, when broken into pieces and thoroughly packed, will sometimes offer such resistance that it is impossible for even a powerful propellor to force its way through it.

How much, if any, of the ice which forms in James' Bay finds its way to Hudson's Straits, and thence into the Atlantic ocean, I am quite unable to say. I have every reason to believe, however, that it is frequently to be met with in the month of August in the middle of Hudson's Bay, and sometimes hardly outside of James' Bay; and that even as late as the 15th of August the pack is strong enough to stop the progress of the Hudson's Bay Company's ships and imprison them for days, if not weeks. I am inclined, therefore, to think that although a portion of the ice formed during the winter on James' Bay may find its way through Hudson's Straits, the greater part of it floats about in Hudson's Bay itself until melted, as the last of it probably would be in the month of September. Of the ice which is poured into the upper end of Hudson's Bay and Straits from Foxes Channel, I know nothing.

When the limited area of James' and other bays on which ice forms in the winter is compared with that of Hudson's Bay itself, which is believed to remain always open, it is certain that the floating ice produced by the former can cover only a fraction of Hudson's Bay during even the earlier months of the summer. If this ice *be all*, propellers, even if unable to work their way through the packs or fields, could, I imagine, generally, if not always, get round them and proceed on their voyage with (as compared with sailing-vessels) very little detention or delay. The necessity of building vessels specially for this trade, and for this trade alone, is the most plausible objection that can be brought against the successful navigation of Hudson's Bay and Straits in a mercantile point of view. The shipowner says the vessels for this route must be steamships necessarily using large quantities of coal, which, if there be no coal suitable for the purpose on Hudson's Bay, would entail the necessity of taking with them sufficient coal to bring them back. He further says that in order to be safe these vessels must be built like whaling and sealing ships, of great thickness and strength, and therefore of great weight. That the consequence would be a great reduction of the carrying capacity, necessitating the charging of much higher freights on the cargo they could really take. Again it is said that these vessels, from their weight and deficient carrying capacity, could not be employed on any other route, as they would be unable to compete with ordinary sea-going steamers. And, finally, as the Hudson's Bay and Straits can only be navigated at all for some four months in the year, these vessels would be entirely unemployed and idle for the other eight months, during which they would be yielding no return whatever on the capital invested. This would still further enhance the rates of freight that it would be necessary to charge, and consequently the whole thing would be a failure in a mercantile point of view. My own impression is that the fleet of vessels engaged in the seal-fishery during the earlier part of the season might be advantageously employed during the summer in transporting grain and other produce from the ports on the Hudson's Bay to some port or point outside the Straits that could be safely approached and entered by ordinary sea-going ships and steamers. Here, of course, a transhipment would be necessary. If sealing vessels, however, would answer for this trade, their employment during a season when *they* would otherwise be doing nothing should enable the owners to carry produce at a rate of freight so moderate as to much more than make up for the cost of this transhipment.

But even if a class of vessels specially fitted for the navigation of Hudson's Bay and Straits had to be built, it may lessen, no doubt, the advantages the route otherwise possesses, but it by no means follows that it counterbalances them. While it would be proper to build vessels of sufficient strength to preserve them from being injured by the ice, my opinion is that they should consist of steam barges and sailing consorts, worked on the same plan as those employed in the grain trade on our great lakes. It would still be desirable to tranship produce intended for Europe. By so doing the vessels specially adapted for the navigation of Hudson's Bay and Straits would be kept there the whole season, while ordinary vessels and steamers would make the Atlantic part of the voyage, for which they are specially fitted. It is not improbable that before the navigation of Hudson's Bay and Straits opened in the spring, and again after it had closed in the fall, such a class of vessels as those in question might be advantageously placed on the route between Quebec and the Maritime Provinces, transporting flour and other produce one way and coal the other. I see no reason why vessels of such strength should not be able to make several trips in the fall after the navigation of the St. Lawrence was practically closed, so far as ordinary ships and steamers were concerned. Nor is it unlikely that one such voyage could be made in the spring. On the whole, it appears to me that these vessels may be kept employed as long, if not longer, than those engaged in the grain trade on our great lakes, and the argument that such vessels must be laid up in the winter and, therefore, unproductive, is just as strong in one case as in the other.

It is sincerely to be hoped that the Dominion Government will waken up to the importance of having a survey and correct charts made of Hudson's Bay, otherwise the navigation, however practicable and safe, will be rendered unnecessarily dangerous.

STATE OF RELIGION.

I have, this season, had the pleasure of meeting, for the first time, the Right Reverend Dr. Horden, Bishop of Moosonee, who, at my request, furnished me with the following interesting information in reference to the history and present state of the Missions in the Diocese:

The Moose mission was commenced by the Wesleyans about the year 1838, who sent to Moose Factory the Rev. G. Barnley, who laboured nine years at Moose and elsewhere in the country very indefatigably, meeting with considerable success and baptizing a large number, both of Indians and half-castes; he then returned to England and for four years the mission was unoccupied. But, Mrs. Miles, wife of the gentleman then in charge of Moose Factory, a woman of great influence among the natives, and a sincere Christian, exerted herself in a most praise-worthy manner to keep the Indians in remembrance of the faith they had embraced, constantly exhorting them and organizing prayer-meetings among them. The Wesleyans, then in considerable difficulties and unable to send a successor to Mr. Barnley, invited the Church Missionary Society to take up the work; this they did, and in 1851 Mr. and Mrs. Horden were sent to Moose under their auspices; in 1852 the mission was visited by Dr. Anderson, the first bishop of Rupert's Land, who ordained Mr. Horden deacon and priest, during his stay. During his Lordship's visit the Rev. E. A. and Mrs. Watkins arrived from England to strengthen the mission, and were sent forward to occupy Fort George on the eastern shore of Hudson's Bay. The bishop visited Moose again in 1855 and 1859, each time expressing the greatest satisfaction at the progress he witnessed. One great cause of advancement was the translation of large portions of the Scriptures into the Indian language, the first of which were printed by Mr. Horden himself at Moose, with a press sent to him by friends in England. These books are all written in a syllabic character, the principle of which is that each letter represents a whole syllable, a consonant and vowel combined; the system is easily acquired and is almost universally known by the natives of the whole diocese of Moosonee, books being printed in it in the Cree, Ojibbeway, Eskimo and Chipewayan languages. In the Cree Mr. Horden has translated the New Testament, the Old Testament, lessons for Sundays and holy days throughout the year, the Psalter, Common Prayer Book, Hymn Book, and Bible, and Gospel History. Into the Ojibbeway have been translated Common Prayer Book, St. Matthew's Gospel, Acts of the Apostles, Hymn Book, and Bible, and Gospel History, and several works into the other two languages named.

The mission continued to grow and prosper, extending its influence more and more every year, until it was felt that the time had arrived for combining the missions around the bay into a bishopric, and accordingly Mr. Horden was invited to England in the autumn of 1872, and on December 15th was consecrated in Westminster Abbey as the first Bishop of Moosonee. For the effective working of the immense diocese placed under his charge, the bishop divided it into six districts.

With the exception of the Eskimo in the vicinity of Churchill and northwards, nearly all the natives have been received into the Christian Church, and except the Indians of Abbitibee, Waswanepe, Machiskun, and half those connected with Albany, who are Romanists, and those of Oxford House, who are Wesleyans, all are in connection with the Church of England. The clergy, under the bishop, labour most indefatigably, and there is not one of them of whom the bishop does not speak in the highest manner. Churches have been erected, a part of them by the Hudson Bay Company, at Moose, Albany, Fort George, Rupert's House, Little Whale River, York, Severn, Trout Lake, Matawakumma, Flying Post and Churchill, while another is now being built at Mistasince. Confirmations had been held in the diocese, when it formed part of the diocese of Rupert's Land, by Bishops Anderson and Mackay at Moose, Albany and Rupert's House; the Bishop of Moosonce has confirmed at York, Churchill, Severn, Trout Lake, Moose, New Post, Albany, Rupert's House, Eastmain, Fort George and Matawakumma, and has confirmed 697 persons.

The number of communicants at Moose is 105, and in the diocese altogether about 700.

The following are the districts into which the Diocese of Moosonee is divided, with the population and languages spoken :

No. 1, Moose, *Comprising :*

	Pop.	Languages.
Moose	395	English, Cree.
New Post	34	English, Ojibbeway.
Abittibi	380	" "

No. 2, Albany, *Comprising :*

	Pop.	Languages.
Albany	500	English, Cree.
Henley	60	English, Ojibbeway.
Martin's Falls	300	" "
Osnaburgh, Cat Lake	440	" "

No. 3, Rupert's River, *Comprising :*

	Pop.	Languages.
Rupert's House	362	English, Cree.
Eastmain River	103	" "
Waswanepe	129	" "
Mistasince	114	" "
Machiskun	61	" "
Nitchekwun	77	" "

No. 4, East Main, *Comprising :*

	Pop.	Languages.
Fort George, Great Whale River	310	English, Cree.
Little Whale River	500	English, Cree, Esquimaux.

No. 5, Matawakumma, *Comprising :*

	Pop.	Languages.
Matawakumma	105	English, Ojibbeway.
Flying Post	114	" "
Metachewan	87	" "
Misenabe, Brunswick	250	" "

No. 6, York, *Comprising :*

	Pop.	Languages.
York	330	English, Cree.
Severn	200	" "
Oxford House	350	" "
Trout Lake	350	English, Ojibbeway.
Churchill	350	English, Esquimaux, Chipawayan.

In some cases in above table the numbers are but approximate, while in others they are exact.

In conclusion I may observe that if "the boundary question" had been definitely settled there are other subjects which I should have felt it to be my duty to bring under the notice of the Government. The urgent need of a lockup and other buildings, and also the desirableness of the appointment of one or two constables in and for this territory, would have been again respectfully presented. The subject of a grant in aid of education might also have been very properly brought forward, and would, I am persuaded, have met with a favourable response from the Government, and the approval of the country at large. The social condition of the natives and others in this territory was discussed in my Report for 1879-80. On page 32 the following were given as the conclusions at which I had arrived :

"The position of the natives of this territory in relation to the Hudson's Bay Company and its officers, has, therefore, been for many years, and still continues to be, a condition of absolute subservience and dependence. Such a position, up to a certain point, in the civilization of a savage race, may not be an unmitigated evil. There are not wanting those who maintain that it is no evil at any stage of civilization, provided that the governing and directing power is not only just, but mild and paternal. I shall not discuss this question, merely contending that this stage, if there be such, previous to which dependency and subserviency are beneficial even to the subservient race, has now been reached by the natives of this territory, and that its prolongation is altogether undesirable, in as much as it is unjust to the natives (many of whom are white men), impedes their further progress, retards the development and settlement of the country, and is inconsistent with the whole tenor and spirit of our institutions. The remedy, and only remedy, in my humble opinion, for this state of things is *to open up this territory,* and that done, the rest may be safely left to the natives themselves, and to the energy, industry and enterprise of the people of Canada."

Such were my opinions then, and such are my convictions now. The interests of the people of this territory and of the Province at large, alike suffer by the continued refusal of the Federal Government to submit to the award of the arbitrators appointed to define the boundaries of Ontario. Every step necessary to open up the country, and to ameliorate the condition of its inhabitants, whether it be their physical comfort, their education, or even their moral and religious welfare, is completely paralyzed. It is to be hoped that this deplorable state of affairs may be soon brought to a final and satisfactory conclusion.

Respectfully submitted,

E. B. BORRON,

Stipendiary Magistrate.

APPENDIX.

LIST OF PLANTS FOUND NEAR MOOSE IN THE YEARS 1881 AND 1882.

The following list of plants, collected at or near Moose Factory, has been given to me by Dr. Haydon, to whose kindness I am also indebted for a number of interesting views of scenes and objects in the territory.—*E. B. B.*

The Scientific names determined at Kew, London, England.

Scientific Names.	Common Names.	Order.
Achillea millefolium. (L.)........	Yarrow	Compositæ.
Actaea spicata. (L.)............	Herb Christopher	Ranunculaceæ.
Alnus viridis. (D. C.)	Mountain alder............	Betulaceæ.
Anaphalis margaritacea. (Bath. et Hooks)........................	....	Compositæ.
Anemone pennsylvanica. (L.)....	....	Ranunculaceæ.
Apocyrum hypecifolium. (Ait.) ..	Indian hemp	Asclopidaceæ.
Arabis Hirsuta	Roche cress...............	Cruciferæ..
Aralia nudicaulis, (L.)...........	Wild sarsaparilla	Araliaceæ.
Arenaria laterifolia. (L.)........	Sandwort	Caryophyllaceæ.
Artemesia absinthium............	Wormwood	Compositæ.
Aster aestivus. (Ait.)	....	Compositæ.
Aster paniculatus. (Ait.)........	....	Compositæ.
Astragalus.....................	Milk-vetch	Leguminosæ.
Bechmannia erucœformis. (Hart.)	....	Graminiæ.
Calypso borealis. (Salsib.)	Calypso	Orchidaceæ.
Campanula rotundifolia. (L.)	Harebell	Campanulaceæ.
Campanula aparinoides. (Pursh.)..	Marsh-bell flower	Campanulaceæ.
Capsella bursa pastoris. (Maench.)	Shepherd's purse	Cruciferæ.
Carex alpina....................	....	Cyperaceæ.
Carex ampulacea. (Good.).......	....	Cyperaceæ.
Carex blanda. (Deuey.)	....	Cyperaceæ.
Carex dishela. (Huds.)..........	....	Cyperaceæ.
Carex lacustris. (Wild.)	....	Cyperaceæ.
Carex limosa	....	Cyperaceæ.
Cassandra calyculata. (Don.)	....	Ericaceæ.
Castilleia mimatata..............	....	Scrophulariaceæ.
Circæa alpina	Enchanter's nightshade	Onagraceæ.
Chelone glauba. (L.)............	Turtle head	Scrophulariaceæ.
Cinnia pendula. (Trin.)..........	Wood reed grass	Gramineæ.
Chrysanthemum leucanthemum ..	....	Compositæ.
Cladonia gracilis. (Hoffm.)	....	Portulaceæ.
Commandra livida. (Rich.)......	Bastard food flax	Santilaceæ.
Cornus serica. (L.).......... ...	Silky cornel	Cornaceæ.

LIST OF PLANTS, ETC.—*Continued.*

Scientific Names.	Common Names.	Order.
Cypripedum passerinum. (Rich.) ..	....	Orchidaceæ.
Cypripedum parviflorum. (Salsib.).	Small yellow ladies' slipper ..	Orchidaceæ.
Cystopteris fragilis. (Bernh.)	....	Filices.
Chiogenes hispidula. (Torr. & Gr.)	Creeping snowberry	Ericaceæ.
Diplopappus umbellatus. (G. & G.)	....	Compositæ.
Elemus canadensis. (L.)	....	Gramineæ.
Elemus mollis. (R. & Br.)	....	Gramineæ.
Eleocharis argenta. (Pursh.)	....	Cyperaceæ.
Eriophorum capitatum. (Hort.) ..	Cotton grass	Cyperaceæ.
Eleocharis palustris. (R. & Br.) ..	Spike rush	Cyperaceæ.
Emphrasia officinalis. (L.)	....	Scrophulaceæ.
Equestrum arvense. (L.)	Horse tail	Equistaceæ.
Erigeron strigosum. (Muhl.)	Fleabane	Compositæ.
Erysimum cheiranthoides. (L.) ..	Worm seed mustard	Cruciferæ.
Epilobium augustifolium	Great willow herb	Onagraceæ.
Festuca elatior. (L.)	Fescue grass	Gramineæ.
Fragaria vesca. (L.)	Wild strawberry	Rosaceæ.
Fucus serratus. (L.)	....	Algæ.
Galium boreale. (Michx.)	Northern bedstraw	Rubiaceæ.
Galium trifolium. (Michx.)	Sweet-scented bedstraw	Rubiaceæ.
Galium verum. (L.)	Bedstraw	Rubiaceæ.
Gelidium cornum. (Saux.)	....	Algæ.
Gentian acuta. (Michx.)	Gentian	Gentianaceæ.
Geum rivale. (L.)	Purple aneus	Rosaceæ.
Glyceria aquatica. (Smith.)	Reed meadow grass	Gramineæ.
Habenaria dilitata. (A. Gray.)	....	Orchidaceæ.
Habenaria rotundefolia. (Richards)	....	Orchidaceæ.
Halena deflexa	Spurred gentian	Gentianacæ.
Hedysarum boreale. (Nutt.)	Hedysarum	Leguminosæ.
Heracleum lanatum. (Michx.)	Cow parsnip	Umbelliferæ.
Hierochloa alpina. (Raen.)	Holy grass	Gramineæ.
Hordum jubatum. (L.)	Squirrel tail grass	Gramineæ.
Hieracium canadense. (Michx.) ..	Canada Hawkweed	Compositæ.
Iris versicolor. (L.)	Larger blue flag	Iridaceæ.
Impatiens. (L.)	Touch-me-not	Balsamineæ.
Juncus diffusus. (Hoffe.)	....	Juncaceæ.
Juncus filliformis. (L.)	....	Juncaceæ.
Juniperus communis. (L.).	Common juniper	Coniferæ.
Juniperus virginana. (L.)	False savin	Coniferæ.
Lamium amplexicaule. (L.)	....	Labiatæ.
Lathyrus maritimus. (L.)	Everlasting pea	Leguminosæ.
Lathyrus venosus. (Muhl.)	Vetchling	Leguminosæ.
Ledum latifolium. (Ait.)	Labrador tea	Ericaceæ.
Leonicera coerula. (L.)	Mountain fly honeysuckle ..	Caprifoliaceæ.

LIST OF PLANTS, ETC.—*Continued.*

Scientific Names.	Common Names.	Order.
Leonicera invulnerata. (Banlus.)		Caprifoliaceæ.
Lillium philadelphicum. (L.)	Wild orange red lily	Liliaceæ.
Linnea borealis. (Gronov.)	Twin flower	Caprifoliaceæ.
Lobelia kalmia. (L.)		Lobeliaceæ.
Lysimachia ciliata. (L.)		Primulaceæ.
Lysimachia stricta		Primulaceæ.
Mianthemum bifolia		Liliaciæ.
Mentha canadensis. (L.)	Wild mint	Labiatiæ.
Mertensia pilosa. (D. C.)	Lungwart	Borroginaceæ.
Mimulus rigens. (L.)	Monkey flower	Scrophulariaceæ.
Mitella nuda. (L.)	Mitre wart	Saxifragaceæ.
Monenses glandeflora. (Salsib.)		Ericaceæ.
Oenathera biennis. (L.)	Common evening primrose	Onagaceæ.
Oxytropis campestris. (L.)		Leguminosæ.
Parnassia palustris. (L.)	Grass of parnassus	Parnassiæ.
Peltageria apthosa. (Hoffm.)		Lichines.
Petasites frigida. (Tries.)		Compositæ.
Phleum pratense	Timothy	Gramineæ.
Poa nemoralis. (L.)		Gramineæ.
Polygonum auriculare. (L.)	Goose grass	Polygonaceæ.
Polypodium dryopteris. (L.)		Filices.
Polygenum viviparum. (L.)	Alpine bitort	Polygonaceæ.
Patamogeton pectinatus		Waidaceæ.
Patamogeton perfoliatus	Sandweed	Waidaceæ.
Potentilla comarum. (L.)		Rosaceæ.
Potentilla fructicosa	Shrubbery cinque foil	Rosaceæ.
Potentilla norvegica	Cinque foil	Rosaceæ.
Primula mistassimica. (Michx.)		Primulaceæ.
Prunella vulgaris. (L.)	Healall	Rosaceæ.
Pyrola chlorantha. (Lin.)	False winter green	Ericaceæ.
Pyrola secunda		Ericaceæ.
Pyrola rotundifolia. (L.)		Ericaceæ.
Polytrictum juniperium. (Hedr.)		
Ranunculus pennsylvanicus. (L.)	Bristly crowfoot	Leguminosæ.
Ribes hurlellum. (Michx.)	Smooth wild gooseberry	Grosulaceæ.
Ribes lacustra. (Poir.)		Grosulaceæ.
Rosa acicularis. (Lind.)		Rosaceæ.
Rubus biflorus. (Richards)	Wild raspberry	Rosaceæ.
Rumex salicifolius. (Weim.)	Willow dock	Polygonaceæ.
Sanicula marilandica. (L.)		Umbelliferæ.
Scirpus lacustris	Bulrush	Cyperaceæ.
Scirpus sylvaticus. (L.)		Cyperaceæ.
Scutellaria galericulata. (L.)	Skullcap	Labiatæ.
Senico aureus. (L.)	Squaw weed	Compositæ.
Senico vulgaris. (L.)	Groundsell	Compositæ.
Shepherdia canadensis. (Nutt.)	Canadian shepherdaria	Santalaceæ.
Sherardia arvensis. (L.)		Rubiaceæ.

LIST OF PLANTS, ETC.—*Continued.*

SCIENTIFIC NAMES.	COMMON NAMES.	ORDER.
Silene inflata. (Smith)	Bladder campion	Caryophyllaceæ.
Sium lineare....................	Water parsnip	Umbelliferæ.
Sisyrinchum anceps. (Car.)	Blue-eyed grass............	Dioscareaceæ.
Smilacina stellata. (Vech.)	....	Sinolaceæ.
Solidago virgaurea. (L.).	Golden rod	Compositæ.
Sparganium ramosum. (Heds.)....	Bur reed	Typhaceæ.
Stacys palustris. (L.)...........	Hedge nettle..............	Labiatæ.
Sysyraiberium humile. (Cam.)....	Hedge mustard...........	Compositæ.
Tanacetum huroneuse...........	Pansy	Compositæ.
Taraxicum officinale. (Wig.)	Dandylion................	Compositæ.
Thalictrum dioicum. (L.)........	Early meadow rye	Ranunculaceæ.
Thurja occidentalis. (L.)	White cedar	Cupressineæ.
Trientalis americanus. (Pursh.) ..	Star flower	Primulaceæ.
Triglôchin maritimum. (L.)......	Arrow grass	Absimachæ.
Trilium cernum. (L.)	Wake Robin..............	Smilaceæ.
Tritum repens. (L.)	Couch grass	Graminæ.
Urtica gracilis. (Ait.)	Blind settle	Urticaceæ.
Vaccinium vitis idæa. (L.).......	Cowberry	Ericaceæ.
Viburnum apulus. (L.)..........	Cranberry tree	Caprifoliaceæ.
Vironica americana. (Schum.)....	American brooklime........	Scrophulaceæ.

MOOSE FACTORY, March 19th, 1883.

REPORT

RELATING TO THE REGISTRATION OF

BIRTHS, MARRIAGES AND DEATHS

IN THE

PROVINCE OF ONTARIO,

FOR THE YEAR ENDING 31st DECEMBER,

1883.

Printed by Order of the Legislative Assembly.

Toronto:
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1884.

CONTENTS.

APPENDIX.

REGISTRAR-GENERAL'S OFFICE, ONTARIO,

TORONTO, December 23rd, 1884.

To His Honour the Honourable John Beverley Robinson,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

In compliance with the Statute in that behalf, the undersigned respectfully presents to Your Honour the Annual Report of Births, Marriages and Deaths for the year ending 31st December, 1883.

Respectfully submitted,

ARTHUR S. HARDY,
Registrar-General.

REPORT

RELATING TO THE

Registration of Births, Marriages and Deaths

IN THE

PROVINCE OF ONTARIO,

FOR THE YEAR ENDING 31st DECEMBER, 1883.

Parliament Buildings,

Toronto, December 1st, 1884.

To the Honourable A. S. Hardy,

Registrar-General, Province of Ontario.

Sir,—I have the honour to present a Report of the Births, Marriages and Deaths registered in this Province during the year ending 31st December, 1883.

The number of Births registered was 42,981, being 552 more than in 1882. Marriages numbered 14,277, being 828 more than in the previous year, and the Deaths registered were 21,049, a decrease of 751 as compared with the number returned in 1882.

The total registrations, therefore, amount to 78,307, as against 77,678 in 1882, an increase of 629.

The following Tables (marked 1 and 2) are condensed from the General Tables in the Appendix, and contain the number of Births, Marriages and Deaths in each County and City in the Province, shewing the increase or decrease, as the case may be, in the numbers returned, also the ratio per 1,000 of the population.

TABLE I.—Table Shewing the Total Number of Births, Marriages and Deaths in Each County of the Province of Ontario in 1883, with the Increase and Decrease, also the Ratios to Population.

COUNTIES.	Number of Births, 1883.	Increase over 1882.	Decrease.	Number of Marriages, 1883.	Increase over 1882.	Decrease.	Number of Deaths, 1883.	Increase over 1882.	Decrease.	Total number of B. M. and D., 1883.	Total number of B. M. and D., 1882.	Increase.	Decrease.	Births. Ratio to 1,000 Population.	Marriages. Ratio to 1,000 Population.	Deaths. Ratio to 1,000 Population.
Algoma	355	23	......	110	......	......	135	......	1	600	578	22	......	17.4	5.4	6.7
Brant	761	94	......	243	13	......	382	30	......	1386	1249	137	......	22.4	7.2	11.3
Bruce	1402	......	152	395	......	15	479	......	46	2276	2489	......	213	21.6	6.1	7.4
Carlton	1841	36	......	599	65	......	1479	......	34	3919	3852	67	......	28.7	9.3	23.0
Dufferin	437	......	62	134	......	17	174	......	13	745	837	......	92	21.2	6.5	8.4
Elgin	757	53	......	338	26	......	330	13	......	1425	1333	92	......	17.8	7.9	7.7
Essex	1401	27	......	361	23	......	587	......	90	2349	2389	......	40	30.1	7.7	12.6
Frontenac	1085	243	......	292	......	4	674	46	......	2051	1766	285	......	25.5	6.8	15.8
Grey	1374	......	78	382	......	21	452	......	136	2208	2443	......	235	19.4	5.4	6.4
Haldimand	476	......	26	164	17	......	188	......	42	828	879	......	51	19.0	6.6	7.5
Halton	468	......	31	133	1	......	207	......	50	808	888	......	80	21.3	6.0	9.4
Hastings	941	......	......	450	9	......	574	......	13	1965	1969	......	4	17.0	8.1	10.4
Huron	1584	......	19	413	......	2	627	......	58	2624	2703	......	79	20.7	5.4	8.2
Kent	1075	......	67	432	......	1	502	......	93	2009	2170	......	161	19.7	7.9	9.2
Lambton	1199	103	......	367	53	......	426	......	2	1992	1838	154	......	23.0	7.1	8.1
Lanark	559	53	......	283	57	......	255	8	......	1097	979	118	......	16.4	8.3	7.5
Leeds and Grenville	895	......	235	421	16	......	570	......	76	1886	2181	......	295	14.8	6.9	9.4
Lennox and Addington	433	......	20	235	22	......	261	......	2	929	929	......	......	16.3	8.8	9.8

Lincoln	668	13	......	241	50	......	401	3	......	1310	1214	66	......	21.1	7.6	12.7
Middlesex	2082	158	......	700	......	49	976	......	127	3758	3776	......	18	22.3	7.5	10.4
Muskoka and Parry Sound	838	......	10	175	4	......	257	......	28	1270	1304	......	34	30.8	6.4	9.4
Norfolk	677	......	96	244	2	......	297	......	48	1218	1360	......	142	20.2	7.2	8.8
Northumberland and Durham	1309	......	58	512	8	......	691	......	......	2512	2562	......	50	16.9	6.6	8.9
Ontario	1221	194	......	347	20	......	576	78	......	2144	1852	292	......	25.0	7.1	11.8
Oxford	1139	53	......	386	66	......	561	......	40	2086	2007	79	......	22.7	7.6	11.2
Peel	529	......	63	192	30	......	263	......	71	981	1088	......	104	20.2	7.3	10.0
Perth	1132	......	44	408	124	......	440	......	71	1980	1971	9	......	21.1	7.6	8.2
Peterborough	836	35	......	264	42	......	409	50	......	1509	1382	127	......	24.1	7.6	11.8
Prescott and Russell	1266	88	......	219	......	52	391	......	44	1876	1884	......	8	33.3	5.7	10.2
Prince Edward	384	......	15	140	......	17	250	......	98	774	904	......	130	18.2	6.6	11.9
Renfrew	828	......	83	274	38	......	321	......	4	1423	1472	......	49	20.5	6.8	7.9
Simcoe	1421	19	......	490	......	8	610	......	10	2521	2520	1	......	18.9	6.5	8.1
Stormont, Dundas and Glengarry	1142	117	......	491	56	......	477	......	63	2110	2000	110	......	17.3	7.4	7.2
Victoria	738	......	2	255	10	......	363	29	......	1356	1319	37	......	20.9	7.2	10.3
Waterloo	1268	31	......	387	......	11	493	......	86	2148	2211	......	63	29.6	9.0	11.5
Welland	703	8	......	225	42	......	318	......	67	1246	1263	......	17	22.1	7.1	10.0
Wellington	1575	1	......	475	39	......	714	......	6	2764	2730	34	......	23.8	7.1	10.8
Wentworth	1935	243	......	616	24	......	1213	148	......	3761	3349	415	......	28.9	9.2	18.1
York	4247	18	......	1484	168	......	2726	263	......	8457	8008	449	......	27.7	9.7	17.8
Totals	42981	1613	1061	14277	1025	197	21049	668	1419	78307	77678	2494	1865	22.3	7.4	10.9
	Increase in Births, 552.			Increase in Marriages, 828.			Decrease in Deaths, 751.			Total increase in B., M. and D., 629.						

TABLE 2.

Return of Births, Marriages and Deaths in the Cities of Ontario with their Population, and Ratio per 1000 living, also the Causes of Death by Classes.

Cities.	Population of 1883 as returned by the Assessors.	Births.		Marriages.		Deaths.		Diseases by Classes.					
		Number returned.	Ratio per 1000 of the population.	Number returned.	Ratio per 1000 of the population.	Number returned.	Ratio per 1000 of the Population.	Class I.—Zymotic Diseases.	Class II.—Constitutional Diseases.	Class III.—Local Diseases.	Class IV.—Developmental Diseases.	Class V.—Violent Deaths.	Cause not stated.
Toronto........	95450	2790	29.2	1083	11.3	2040	21.3	426	493	799	246	56	20
Hamilton......	39216	1202	30.6	445	11.3	822	20.9	148	200	314	130	19	11
Ottawa	30700	1015	33.0	427	13.9	1211	39.4	252	417	281	193	30	38
London........	20976	550	26.2	274	13.6	280	13.3	51	77	97	43	9	3
Kingston	15297	501	32.7	180	11.7	384	25.1	34	101	119	49	17	64
Brantford......	11783	263	22.3	112	9.5	159	13.5	31	41	66	15	4	2
St. Thomas....	10811	262	24.2	156	14.4	91	8.4	19	18	34	13	7	....
Guelph	10190	299	29.3	96	9.4	150	14.7	22	44	49	29	3	3
St. Catharines..	10053	180	17.9	126	12.5	166	16.5	19	50	73	19	1	4
Belleville	9742	181	18.5	126	12.9	164	16.8	31	51	54	20	7	1
Total	254218	7243	28.5	3025	11.9	5467	21.5	1033	1492	1886	757	153	146

BIRTHS.

TABLE 3.

ORDER OF BIRTHS BY MONTHS IN 1882 AND 1883.

MONTHS.	1882.			MONTHS.	1883.		
	Male.	Female.	Total.		Male.	Female.	
March	2013	1913	3926	March	2031	1982	4013
August	1954	1794	3748	September	1952	1869	3821
September	1874	1791	3665	April	1919	1804	3723
October	1875	1771	3646	August	1890	1779	3669
January	1859	1775	3634	October	1872	1734	3606
February	1839	1718	3557	January	1860	1698	3558
April	1806	1719	3525	May	1787	1770	3557
July	1755	1707	3462	July	1814	1720	3534
December	1871	1582	3453	February	1821	1622	3443
May	1753	1624	3377	December	1786	1621	3407
November	1677	1629	3306	November	1718	1639	3357
June	1625	1505	3130	June	1665	1628	3293
Total	21901	20528	42429	Total	22115	20866	42981

TABLE 4.

BIRTHS BY MONTHS IN THE CITIES, 1883.

CITIES.	SEX.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Quadruplets.	No. of pairs of twins.	Triplets.	Illegitimate.	Still Born.
Toronto	Males	120	119	124	103	119	96	96	136	125	123	110	128	1399	....	20	....	66	10
	Females	89	101	120	117	112	112	112	132	138	114	114	130	1391	....	36	....	55	9
	Total	209	220	244	220	231	208	208	268	263	237	224	258	2790	....	28 pairs	....	121	19
Hamilton	Males	45	55	54	62	46	44	56	55	57	48	57	47	626	....	11	1	33	10
	Females	35	41	53	50	60	33	54	46	54	51	59	40	576	....	19	2	22	6
	Total	80	96	107	112	106	77	110	101	111	99	116	87	1202	....	15 pairs	1 case	55	16
Ottawa	Males	48	54	70	53	46	53	55	37	32	35	25	48	556	....	12	5	170	2
	Females	32	32	66	49	37	50	55	34	30	24	24	26	459	....	10	4	161	1
	Total	80	86	136	102	83	103	110	71	62	59	49	74	1015	....	11 pairs	3 cases	331	3
London	Males	25	28	28	28	23	18	16	26	31	26	22	15	286	2	5	1	19	2
	Females	24	25	22	20	27	18	23	26	23	18	17	21	264	2	5	2	17	2
	Total	49	53	50	48	50	36	39	52	54	44	39	36	550	1 case	5 pairs	1 case	36	4
St. Catharines	Males	13	5	4	7	6	4	6	9	5	6	9	11	85	....	2	....	......	......
	Females	9	3	5	12	9	6	4	10	8	7	13	9	95	....	2	....	......	......
	Total	22	8	9	19	15	10	10	19	13	13	22	20	180	....	2 pairs	....	......	......

TABLE 4.—*Continued.*

CITIES.	SEX.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Quad-ruplets.	No. of pairs twins.	Triplets.	Illegitimate.	Still Born.
Kingston	Males	22	23	18	15	25	35	23	24	16	12	17	12	242	....	3	....	2	1
	Females	18	25	16	28	14	29	28	17	18	20	24	22	259	....	3	....	5	2
	Total	40	48	34	43	39	64	51	41	34	32	41	34	501	....	3 pairs	....	7	3
Belleville	Males	9	8	5	8	14	9	8	7	9	14	12	7	110	....	2	....	1	4
	Females	7	4	9	4	7	4	5	7	3	9	8	4	71	....	....	....	1	1
	Total	16	12	14	12	21	13	13	14	12	23	20	11	181	....	1 pair	....	2	5
Brantford	Males	13	6	11	9	12	7	13	12	15	13	14	8	133	....	2	....	1	3
	Females	8	3	16	9	15	11	13	9	9	13	14	10	130	....	2	....	2	1
	Total	21	9	27	18	27	18	26	21	24	26	28	18	263	....	2 pairs	....	3	4
Guelph	Males	12	10	17	12	11	8	13	21	12	6	11	16	149	....	1	....	4	1
	Females	18	12	11	13	16	11	13	18	11	12	6	9	150	....	3	....	5	1
	Total	30	22	28	25	27	19	26	39	23	18	17	25	299	....	2 pairs	....	9	2
St. Thomas	Male	......	9	17	14	6	15	10	9	12	10	10	16	128	....	5	....	2	......
	Female	14	12	11	11	6	11	12	7	12	12	15	11	134	....	1	....	....	......
	Total	14	21	28	25	12	26	22	16	24	22	25	27	262	....	3 pairs	....	2	......
	Total Males	307	317	348	311	308	289	296	336	314	293	287	308	3714	2	63	7	298	33
	" Females	254	258	329	313	303	285	319	306	306	280	294	282	3529	2	81	8	268	23
	Grand Total	561	575	677	624	611	574	615	642	620	573	581	590	7243	1 case	72 pairs	5 cases	566	56

TABLE 5.

Quarterly Return of Births in 1882 and 1883.

QUARTERS.	1882.			1883.		
	Males.	Females	Totals.	Males.	Females	Totals.
Quarter ending March 31st	5711	5406	11117	5712	5302	11014
" " June 30th	5184	4848	10032	5371	5202	10573
" " September 30th	5583	5292	10875	5656	5368	11024
" " December 31st	5423	4982	10405	5376	4994	10370
	21901	20528	42429	22115	20866	42981

TABLE 6.

The number of births within the several specified periods was as follows :—

For the year	42,981—	Males,	22,115 ;	Females,	20,866.
" month	3,581	"	1,843 ;	"	1,738.
" week	826	"	425 ;	"	401.
" day	118	"	61 ;	"	57.

The difference between the male and female births reported in each year, for the last ten years, is shewn to have been as follows :—

In 1873	there were	1,037	more male than	female births.
" 1874	"	1,073	"	"
" 1875	"	1,064	"	"
" 1876	"	987	"	"
" 1877	"	1,361	"	"
" 1878	"	1,780	"	"
" 1879	"	1,651	"	"
" 1880	"	1,726	"	"
" 1881	"	1,580	"	"
" 1882	"	1,373	"	"
" 1883	"	1,249	"	"

TABLE 7.

The following Statement shews the total number of Births in each quarter for the last nine years with the percentages.

QUARTERS.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	Total for nine years.	Percentage of the whole nine years.
January to March........	6998	10012	12580	10652	11333	11050	10845	11117	11014	95601	27.0
April to June............	6481	9566	9899	9688	10484	10345	9893	10032	10573	86961	24.5
July to September........	6474	9623	9854	10075	9944	10893	10146	10875	11024	88908	25.1
October to December......	6015	9257	7624	9821	9274	10024	9830	10405	10370	82620	23.4
Total............	25968	38458	39957	40236	41035	42312	40714	42429	42981	354090	100.00

TABLE 8.

Births by Months in the Province, 1883, shewing the proportion of Male to Female Births.

SEX.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
Males..........	1860	1821	2031	1919	1787	1665	1814	1890	1952	1872	1718	1786	22115
Female.........	1698	1622	1982	1804	1770	1628	1720	1779	1869	1734	1639	1621	20866
Total..........	3558	3443	4013	3723	3557	3293	3534	3669	3821	3606	3357	3407	42981
Male births to 100 female births.....	109.5	112.2	102.4	106.3	101.0	102.2	105.4	106.2	104.4	107.9	104.8	110.2	105.9

Births by Months in the ten Cities during 1883, shewing the proportion of Male to Female Births.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Males..........	307	317	348	311	308	289	296	336	314	293	287	308	3714
Females......	254	258	329	313	303	285	319	306	306	280	294	282	3529
Total.........	561	575	677	624	611	574	615	642	620	573	581	590	7243
Male births to 100 female births.....	120.	122.8	105.7	99.3	101.6	104.0	92.7	109.8	102.5	104.6	97.6	109.2	105.2

TABLE 9.

Comparative Statement of the Birth Rate in the Cities of Ontario for Eight Years.

CITIES.	1876.			1877.			1878.			1879.		
	Population as returned by the Assessors.	Number of Births.	Birth rate per 1,000 living.	Population.	Number of Births.	Birth rate per 1,000 living.	Population.	Number of Births.	Birth rate per 1,000 living.	Population.	Number of Births.	Birth rate per 1,000 living.
Toronto	71673	1984	27	67386	2222	32	70867	2637	37	73813	2638	35
Hamilton	32641	644	19	32641	940	28	33511	1008	30	34268	994	29
Ottawa	25000	458	18	24431	339	13	24000	474	19	24015	479	19
London	18196	456	25	18898	465	24	19186	521	27	19666	539	27
St. Catharines	12870	137	10	13143	164	12	11079	172	15	10475	186	17
Kingston	12786	416	32	13253	349	26	14072	352	25	14358	889	27
Belleville	9768	284	29	11192	321	28	9612	301	31	9789	330	33
Brantford	9444	237	25	10631	278	26	10792	262	24	10587	254	24
Guelph	9017	311	34	9677	341	35	9918	340	34	10072	298	29
St. Thomas	5527	109	19	5954	123	20	6446	125	19	7217	154	21

CITIES.	1880.			1881.			1882.			1883.		
	Population according to Census.	Number of Births.	Birth rate per 1,000 living.	Population according to Census, 1881.	Number of Births.	Birth rate per 1,000 living.	Population according to Census, 1881.	Number of Births.	Birth rate per 1,000 living.	Population of 1883 as returned by Assessors.	Number of Births.	Birth rate per 1,000 living.
Toronto	83410	2650	31.7	86445	2545	29.4	86415	2600	30.0	95450	2790	29.2
Hamilton	35041	941	26.7	35965	957	26.6	35961	948	26.3	39216	1202	30.6
Ottawa	26830	667	24.8	27417	495	18.0	27412	1042	38.0	30700	1015	33.0
London	19370	487	24.6	19763	426	21.5	19746	449	22.7	20976	550	26.2
St. Catharines	9465	257	27.1	9642	172	17.8	9631	192	20.0	10053	180	17.9
Kingston	13925	397	28.5	14093	363	25.7	14091	329	23.3	15297	501	32.7
Belleville	9295	296	31.8	9516	210	22.0	9516	190	20.0	9742	181	18.5
Brantford	9475	263	27.7	9626	247	25.6	9616	255	26.5	11783	263	22.3
Guelph	9589	289	30.1	9890	282	28.5	9894	284	28.7	10190	299	29.3
St. Thomas	7753	182	23.6	8370	204	24.3	8367	177	21.1	10811	262	24.2

TABLE 10.

Illegitimate Births, Twins and Triplets.

YEAR.	Illegitimate Births. No.	Illegitimate Births. Proportion to the whole Number of Births.	Illegitimate Births. Ratio in every 1,000 Births.	No. of Twins.	No. of Triplets.
1872	235	One in every 99 Births	10.0	76	0
1873	229	" " 129 "	8.3	200	1
1874	196	" " 144 "	6.9	255	2
1875	198	" " 131 "	4.8	264	1
1876	392	" " 98 "	10.1	349	1
1877	529	" " 75 "	13.2	411	5
1878	575	" " 70 "	14.2	425	9
1879	524	" " 78 "	12.7	378	1
1880	671	" " 63 "	15.8	407	6
1881	748	" " 54 "	18.3	384	3
1882	966	" " 43 "	22.7	389	5
1883	989	" " 43 "	23.0	377	8
Average for 12 years	521	One in every 85 Births		326	3.5

BIRTHS.

(See Appendix Page IV., also Table 1.)

There has been a steady increase in the number of Births registered since the Registration Act came into operation on July 1st, 1869. In 1870, the first full year, there were 19,536 Births returned; in 1883 the number was 42,981, an average yearly in of 1,804. The ratio of Births to Population in 1870 was 12 per 1,000; in 1883 it had increased to 22.3 per 1,000.

Each of the counties of Frontenac and Wentworth shew an increase of 243, which is larger than that of any other county, while Leeds and Grenville (United) shew the largest falling off, viz., 235 less than in 1882. The counties of Ontario, Middlesex, Stormont, Dundas and Glengarry (United), and Lambton return increases in the number of Births registered, ranging from 194 in the County of Ontario, to 103 in Lambton; whereas in the counties of Bruce, Norfolk, Renfrew and Kent, there is a falling off in the returns as compared with 1882, of from 152 in Bruce to 67 in Kent. The county of Hastings returns exactly the same number of Births in 1883 as in 1882, viz., 941. If 30 Births per 1,000 of the Population be accepted as the birth rate of Ontario, then only three counties, Prescott and Russell (United), Muskoka and Parry Sound (United) and Essex have reached that standard. When these latter counties which have been comparatively lately settled have reached the standard, there is no justifiable reason why the older settled counties should shew such neglect in this matter, especially as they possess better facilities for registration. That they do fail to register in many cases is exemplified in Table 1, which shews that the older settled counties of Haldimand, Hastings, Lennox and Addington, Northumberland and Durham (United), Lincoln, Middlesex, Norfolk and Oxford do not in any of them return a higher birth rate than 22 per 1,000, and some of them as low as 16 per 1,000. Prescott and Russell (United) returned the highest birth rate, viz., 33.5 per 1,000, and Leeds and Grenville (United) the lowest, viz., 14.8 per 1,000. The average ratio for the whole Province was 22.3 per 1,000; for the ten cities it shews much greater, viz., 28.5 per 1,000. This is to be expected, as the statistics of other countries invariably shew that the birth rate is always higher in cities and towns than in the rural districts. Three cities returned a higher rate than 30 per 1,000, viz., Ottawa 33, Kingston 32, and Hamilton 30.6 per 1,000, while Toronto and Guelph are not far behind; their birth rate being 29.1 and 29.3, respectively. St. Catharines returned the lowest rate of any, 17.9 per 1,000, and Belleville was very little in advance, viz., 18.5 per 1,000. St. Catharines has always returned a low birth rate, never exceeding 20 per 1,000 in the last eight years, except in 1880, when it reached 27.1 per 1,000. Belleville formerly returned a birth rate as high as 33 per 1,000, but for the last four years the rate has gradually decreased from 31.8 in 1880 to 18.5 per 1,000 in 1883. Evidently the Births are not yet all registered in those places, for with increased population, increased registrations of births must be expected. For four years, viz., those between 1876 and 1880, the birth rate of Ottawa did not exceed 19 per 1,000. In the year 1877, it was only 13 per 1,000 (see Table 9). The returns, however, suddenly increased from 18 per 1,000 in 1881 to 38 per 1,000 in 1882, but again decreased to 33 per 1,000 in 1883.

(See Tables 3, 4, 5, 6, 7 and 8.)

In noticing the sexes of the children born it is found that the number of male births always exceeds the number of the female births. The average excess in the last ten years was 7.2 per cent. In 1878 there was a difference of 9 per cent. in favor of the males. In 1882 the excess was the smallest, the male births being only 5 per cent. more than the female. In five of the ten years the difference was the same, 8 per cent. more male than female births.

The table of births by months shews that February in 1883 returned the most marked difference in the sexes; the relation was 112 males to 100 females, but that month returned the lowest number of female births of any month in the year. The highest proportion in any month in 1882 was in December, viz., 118 males to 100 females; May returned the least difference in the sexes, 101 males to 100 females; March returned the largest number of both sexes, 4,013, and also the largest number of male births, while June returned the least. In the Province the male births exceed the female births in every month of the year, whereas in the cities the months of April, July and November shewed a larger number of female births than male births.

In the returns from the cities those months of the year where the male births are in excess the proportion is much larger than in the returns for the whole Province, thus, the month of January returns 122 males to 100 females, February 123.8 to 100, and August 109.8 to 100, whereas the highest proportion in any month in the returns for the Province was 112 males to 100 females. The relation between the sexes in the whole number of births registered in the Province was nearly the same as in the total births registered in the cities, viz., 105.9 males to 100 females in the Province, and 105.2 to 100 in the cities.

In the table of births in the ten cities, March returned the highest number of births, as it did in the whole Province, and January the lowest. The first and second quarters of the year shew more births in the cities than in the other two quarters.

The return of births for the whole Province in the first and third quarters of the year was nearly the same, the third being the highest; the fourth quarter returns the lowest number of births; in 1882 the second quarter held that position.

Illegitimate Births, Twins and Triplets (see Table 10).

The illegitimate birth rate was about the same as in 1882, one in every 43 births. There was, however, a slight increase in the number returned, but there was also an increase in the number of births, which equalizes the rate. The number of these births, 989, in one year, appears very large, but it must be noted that the county of Carleton alone returns 509 of this number, four times as many as the county of York returned, although the largest city in the Province, Toronto, was included in that county. Of these 509 illegitimate births in Carleton, Ottawa city returned 331 of them. The cause of the continued very large returns of illegitimate births from the county of Carleton appears to be the same as mentioned in last year's report, viz., that they are mostly received from the two lying-in hospitals, one located in Ottawa city, and another just outside of its limits. Eliminating the number returned from these two institutions from the total number returned for the Province, the rate would be only one illegitimate birth to every 86 births in the Province, and it would seem that this deduction would be just to a very great extent, as a large portion of these births was the offspring of mothers belonging to countries outside the Province. In 1880 the number returned from the county of Carleton was 126. In 1881 it increased to 144. In 1882 the very large number of 462 was returned, and in 1883, 509 as before mentioned.

There were 326 pairs of twins registered in 1883, five more than in 1882, and eight cases of triplets, three more than in 1882. One case of four children at a birth was returned from the city of London, but from information received three of these children only lived a short time.

MARRIAGES.

MARRIAGES.

TABLE 11.

Marriages by Denominations.

(*See Appendix Page* xii.)

Of the whole number of persons married in 1882 the percentages of those whose religious denominations were given were as follows:—

35.30	per cent.	(or 1 in every	2.83)	were	Methodists.
20.33	"	("	" 4.92)	"	Presbyterians.
17.37	"	("	" 5.75)	"	Episcopalians.
13.39	"	("	" 7.47)	"	Roman Catholics.
5.44	"	("	" 18.40)	"	Baptists.
1.93	"	("	" 51.73)	"	Bible Christians.
1.88	"	("	" 53.16)	"	Lutherans.
.88	"	("	" 113.50)	"	Congregationalists.
.58	"	("	" 171.27)	"	Evangelical Association.
.54	"	("	" 185.50)	"	Mennonites.
.03	"	("	" 2988.67)	"	Quakers.
1.33	"	("	" 75.00)	"	of other denominations.

The percentages in 1883 were as follows:—

34.67	per cent.	(or 1 in every	2.88)	were	Methodists.
19.73	"	("	" 5.06)	"	Presbyterians.
17.74	"	("	" 5.63)	"	Episcopalians.
14.37	"	("	" 6.59)	"	Roman Catholics.
5.09	"	("	" 19.06)	"	Baptists.
1.96	"	("	" 50.89)	"	Lutherans.
1.95	"	("	" 51.08)	"	Bible Christians.
1.06	"	("	" 93.92)	"	Congregationalists.
.60	"	("	" 164.10)	"	Evangelical Association.
.57	"	("	" 196.89)	"	Mennonites.
.09	"	("	" 1057.55)	"	Quakers.
2.15	"	("	" 46.42)	"	of other denominations.

TABLE 12.

Marriages by Months, in Numerical Order.

1882.		1883.	
December	1573	December	1614
October	1340	October	1547
November	1330	January	1519
January	1232	November	1263
September	1202	March	1167
March	1164	September	1139
February	1158	April	1130
April	1004	February	1044
May	921	June	1018
June	880	May	1014
July	834	July	942
August	753	August	821
No date given	58	No date given	59
Total	13449	Total	14277

The average number of marriages, per quarter, for 1883 was						3,569
"	"	"	"	month,	"	1,189
"	"	"	"	week,	"	274
"	"	"	"	day,	"	39

TABLE 13.

Quarterly Return of Marriages 1882 and 1883.

QUARTERS.	1882.		1883.	
	Number of Marriages.	Per cent. of the whole Number.	Number of Marriages.	Per cent. of the whole Number.
Quarter ending 31st March	3554	26.4	3730	26.1
" " 30th June	2805	20.9	3162	22.2
" " 30th September	2789	20.7	2902	20.3
" " 31st December	4243	31.6	4424	31.0
Date of Marriages omitted	58	.4	59	.4
	13449	100.0	14277	100.0

TABLE 14.—MARRIAGES BY AGES.

The proportion of males to females married during the different quinquennial periods of life for the year 1882-83 to the whole number of marriages, is shown in the appended table :—

QUINQUENNIAL PERIODS OF LIFE.	1882. Whole number of Marriages, 13,449.				1883. Whole number of marriages, 14,277.			
	Males.		Females.		Males.		Females.	
	Number Married.	Per cent. of whole.	Number Married.	Per cent. of whole.	Number Married.	Per cent. of whole.	Number Married.	Per cent. of whole.
Under 20 years	175	1.30	2808	20.88	175	1.22	2841	19.90
From 20 to 25 years	5072	37.72	6659	49.51	5341	37.42	7168	50.20
" 25 to 30 "	4758	35.38	2516	18.71	4944	34.62	2599	18.20
" 30 to 35 "	1657	12.33	681	5.06	1869	13.09	771	5.40
" 35 to 40 "	733	5.45	303	2.25	734	5.14	337	2.36
" 40 to 45 "	381	2.83	174	1.30	429	3.00	212	1.48
" 45 to 50 "	207	1.54	96	.72	240	1.68	117	.82
" 50 to 55 "	149	1.12	72	.54	177	1.24	58	.41
" 55 to 60 "	107	.79	35	.26	116	.81	60	.42
" 60 to 65 "	77	.58	22	.16	87	.61	22	.15
" 65 to 70 "	44	.32	6	.04	61	.43	8	.06
" 70 to 75 "	26	.19	7	.05	31	.22	5	.04
" 75 to 80 "	11	.08	2	.02	9	.07	1	.01
" 80 and over	2	.02	0	.00	0	....	0	0
Ages not given	50	.35	68	.50	64	.45	78	.55
	13449	100.00	13449	100.00	14277	100.00	14277	100.00

TABLE 15.—Marriages exhibiting great disparity in the ages of those married.

Counties.	Bridegroom the Elder. Occupation of Bridegroom.	Age of Bridegroom.	Age of Bride.	Counties.	Bridegroom the Elder. Occupation of Bridegroom.	Age of Bridegroom.	Age of Bride.	Counties.	Bride the Elder. Occupation of Bridegroom.	Age of Bridegroom.	Age of Bride.
Dufferin	Farmer	70	50	Ontario	Farmer	74	64	Essex	Farmer	65	71
Essex	Labourer	75	70	Oxford	"	73	69	Huron	"	64	77
Grey	Farmer	70	57	"	Mason	72	52				
Hastings	"	70	24	Peel	Clerk	74	64				
Huron	"	72	40	Perth	Farmer	71	51				
"	Gentleman	72	54	"	Gentleman	74	65				
Kent	Merchant	70	60	"	Farmer	70	56				
Leeds and Grenville	Farmer	75	56	"	"	71	66				
"	Gentleman	72	44	Prince Edward	"	71	52				
Lennox and Addington	"	75	50	Simcoe	Shoemaker	72	23				
"	Merchant	70	63	Stormont, Dundas and							
Middlesex	Farmer	70	70	Glengarry	Miller	70	29				
"	Gentleman	70	34	"	Farmer	72	58				
"	"	70	58	Welland	"	79	66				
Norfolk	Farmer	75	60	"	Gentleman	72	72				
"	Justice of the Peace	79	56	Wellington	Farmer	72	55				
Northumberland & Dur-				Wentworth	"	74	60				
ham	Gentleman	73	37	York	Auctioneer	71	52				
"	Farmer	70	70	"	Gentleman	73	60				
"	Gentleman	74	59	"	Farmer	72	52				
"	Labourer	78	56	"	Gentleman	78	47				

TABLE 1.

Marriages.

(See Table 1.)

The number of marriages registered in 1883 was 14,277, an increase of 828 over the number returned in 1882. The ratio to 1,000 of the population for the whole Province was 7.4; in the cities it was 11.9. Those counties which include within their borders, cities and large towns, naturally return the largest ratio of marriages, thus the county of York, including the city of Toronto, returns a marriage ratio of 9.7 per 1,000; Carlton, including the city of Ottawa, 9.3 per 1,000; Wentworth, including the city of Hamilton, 9.2 per 1,000; Waterloo, including the town of Berlin, 9.0 per 1,000; whereas the following counties which contain no cities or large towns return a comparatively low marriage rate, viz., Prescott and Russell (United) a ratio of 5.7 per 1,000; Huron, 5.4 per 1,000; Grey, 5.4 per 1,000; Halton, 6.0 per 1,000, and Bruce, 6.1 per 1,000. The largest increases in the number of marriages were from the counties of York, 168; Perth, 124; Oxford, 66; Carleton, 65; Lanark, 57, and Stormont, Dundas and Glengarry (United), 56. The largest decreases were in the counties of Prescott and Russell (United), 52; Middlesex, 49; and Grey, 21. Only 11 counties returned a decrease in 1883, all the other 28 counties reported increases in the number of marriages.

Marriages by Denominations.

(See Appendix, Page xii., *also Table 11.)*

The union of all the different Methodist bodies into one church does not affect this table, as the different divisions of that denomination were always classified under one general heading, Methodists. In every Annual Report issued from this Department the number of Methodists married shewed always in excess of any other denomination. Of the 28,554 persons married in 1883, 9,907 or 34.67 per cent. were Methodists. They exceeded in number the Episcopalians by 4,840 or 95 per cent.; the Presbyterians by 4,272 or 75 per cent.; and the Roman Catholics by 5,801 or 141 per cent.

In the following six counties the marriages of Methodists were the largest in proportion to the whole number of persons married in each county, thus:—The county of Prince Edward returned 280 persons married in 1883, of whom 206 or 73 per cent. were Methodists. The counties of Lennox and Addington returned 470 persons married in 1883, of whom 312 or 66 per cent. were Methodists. The county of Hastings returned 900 persons married in 1883, of whom 483 or 53 per cent. were Methodists. The county of Kent returned 864 persons married in 1883, of whom 415 or 48 per cent. were Methodists. The counties of Northumberland and Durham (United) returned 1,024 persons married in 1883, of whom 486 or 47 per cent. were Methodists. The county of Lambton returned 734 persons married in 1883, of whom 338 or 46 per cent. were Methodists.

In the following four counties the Presbyterians had the largest proportion:—The county of Bruce returned 790 persons married in 1883, of whom 255 or 32 per cent. were Presbyterians. The county of Huron returned 826 persons married in 1883, of whom 278 or 33 per cent. were Presbyterians. The county of Lanark returned 566 persons married in 1883, of whom 219 or 38 per cent. were Presbyterians. The county of Perth returned 816 persons married in 1883, of whom 240 or 29 per cent. were Presbyterians.

In the following five counties the Roman Catholics have the largest proportion:—The counties of Prescott and Russell (United) returned 438 persons married in 1883, of whom 358 or 81 per cent. were Roman Catholics. The county of Carleton returned 1,198 persons married in 1883, of whom 591 or 49 per cent. were Roman Catholics. The county of Renfrew returned 548 persons married in 1883, of whom 227 or 41 per cent. were Roman Catholics. The county of Essex returned 722 persons married in 1883, of whom 286 or 39 per cent. were Roman Catholics. The counties of Stormont, Dundas and Glengarry (United) returned 982 persons married in 1883, of whom 323 or 33 per cent. were Roman Catholics.

In only one county—York—were the Episcopalians the largest proportion, it returned 2,968 persons married, of whom 927 or 31 per cent. were Episcopalians. In Waterloo the marriages of Lutherans were more numerous than those of any other denomination; they numbered 174 or 22 per cent. of the 774 marriages in that county.

Marriages by Months and Quarters.

(See Appendix, Page xxii., *also Tables 12 and 13.)*

December again returns the largest number of marriages; the three months, October, December and January, returned 4,680 marriages, 32 per cent. of the whole number, a convincing proof that these months are favourable to matrimony. August returned the lowest number of marriages, 821, only 5 per cent. Ontario to a large extent is a farming country, and as August is generally a busy harvest month the marriage rate for that month may be expected to be low.

Marriages by Ages.

(See Appendix, Page xxiv., *also Table 14.)*

Exactly the same number of young men (175) were married under twenty years of age in 1883 as in 1882, and very nearly the same number of young women were married under that age as in 1882, viz., 2,841 in that year and 2,808 in 1883. Of all the men married in 1883, only 1.22 per cent. were under 20 years, while of the women, nearly twenty per cent. were under that age. The difference in the next decade is not nearly so great, but still the number of females between 20 and 25 years of age who were married during that period exceeds the males at those ages by 1,827 or 34 per cent. In the next period the relation is changed and there are returned 2,345 or 90 per cent. more men married between the ages of 25 and 30 years than women of those ages, and this relation between the sexes as regards their ages at the time of their marriage continues throughout the remaining decades, though with a less ratio.

Marriages at Advanced Ages.

(See Table 15.)

The oldest man married in 1883 was 79 years of age when married, five years younger than the oldest man married in 1882. In 1883 none of the men reached the age of 80 years before marriage, but two were married at the respectable old age of 79 years, one was a Justice of the Peace in the county of Norfolk, the other a farmer in the county of Welland. The youngest man married was 17 years old at the time of his marriage. The age of the oldest lady married was 77 years, she lived in the county of Huron, and the six youngest brides were only 14 years of age when they took partners for life. The two old men of 79 years took unto themselves wives of the respective ages of 66 and 56, so that the total ages of the oldest couple amounted to 145 years, one year more than the united ages of the oldest couple married in 1882. The youngest couple married were of the ages of 17 and 16 years respectively, their united ages being 33,—112 years less than the total ages of the oldest couple. The two old ladies whose ages were 77 and 72 at the time of their marriage took partners aged 64 and 72 years. Of the six young damsels who entered the married state at the early age of 14 years, three of them married young men of 21, two of them men of 22 years, and one to a man 29 years of age. Besides these youthful maidens who married at 14 years, 13 others were married at 15 years, and 50 at 16 years. As in 1882, so in 1883 more widowers were married than widows, viz., 1,638 widowers and 744 widows re-entered the married state.

DEATHS.

DEATHS.

(*See Appendix, page* lxxii.

TABLE 16.—DEATHS AT DIFFERENT AGES.

The death rate under one year, from one to five, from five to ten, and in each decennial period thereafter, for the years 1876, 1877, 1878, 1879, 1880, 1881, 1882 and 1883, is shewn in the following table :—

—	1876.		1877.		1878.		1879.		1880.		1881.		1882.		1883.	
	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.	No.	Per cent. of the whole.
Total under 1 year	3844	21.4	4704	24.1	3963	22.9	3869	22.2	4379	22.8	5246	23.6	4874	22.3	4882	23.2
" from 1 year to 5 years	2471	13.7	2841	14.6	2321	13.4	2159	12.3	2795	14.6	3120	14.0	2942	13.6	2215	10.5
Total under 5 years	6315	35.1	7545	38.7	6284	36.3	6028	34.5	7174	37.4	8366	37.6	7826	35.9	7097	33.7
Total from 5 to 10 years	1012	5.6	1064	5.6	904	5.2	777	4.5	976	5.1	1144	5.2	1150	5.2	825	3.9
" 10 " 20 "	1341	7.5	1391	7.1	1187	6.8	1057	6.1	1197	6.2	1499	6.8	1449	6.6	1377	6.5
" 20 " 30 "	1696	9.5	1687	8.6	1623	9.4	1622	9.3	1785	9.3	2027	9.1	1930	8.8	2105	10.0
" 30 " 40 "	1316	7.4	1310	6.7	1201	7.0	1205	6.9	1192	6.2	1451	6.5	1359	6.3	1519	7.2
" 40 " 50 "	1116	6.2	1444	5.8	1026	6.0	1112	6.3	1142	5.9	1302	5.9	1201	5.5	1249	5.9
" 50 " 60 "	1099	6.1	1098	5.6	1067	6.1	1166	6.6	1119	5.8	1278	5.8	1257	5.8	1283	6.1
" 60 " 70 "	1311	7.3	1389	7.1	1276	7.4	1486	8.5	1468	7.6	1549	6.9	1600	7.4	1557	7.4
" 70 " 80 "	1595	9.0	1572	8.1	1551	9.0	1675	9.6	1803	9.4	2058	9.3	1952	8.9	1903	9.1
" 80 " 90 "	917	5.1	1000	5.2	951	5.5	1071	6.2	1112	5.9	1269	5.7	1250	5.8	1254	6.0
" 90 " 100 " and over	228	1.2	272	1.5	214	1.3	269	1.5	235	1.2	265	1.2	273	1.2	223	1.1
	17946	100.0	19472	100.0	17284	100.0	17468	100.0	19203	100.0	22208	100.0	21237	97.4	20392	96.9
Age not given	677	3.6	581	2.8	524	2.9	490	2.7	599	3.0	613	2.7	563	2.6	657	3.1
Whole number of deaths	18623	....	20053	....	17808	....	17958	....	19802	....	22821	....	21800	100.0	21049	100.0

TABLE 17.

List of Centenarians, 1883.

No.	Name.	Sex.	Occupation.	Where Born.	Age at Death.	Where Died.	Cause of Death.
1	Henrietta McDonald	F.	Farmer's wife	Scotland	107	Tp. Kincardine, Bruce County	Old age.
2	William Norris	M.	Farmer	Berkshire, England	104	" S. Dorchester, Elgin "	"
3	Daniel Banks	M.	"	Kentucky, U. S	107	" Anderdon, Essex "	"
4	John Orton	M.	Pauper	United States	100	" Maidstone, " "	"
5	James Stowe	M.	Farmer	England	100	" " " "	"
6	John Brazil	M.	Labourer	Africa	109	Owen Sound, Grey "	"
7	John McPhail	M.	Farmer	Isle of Mull, Scotland	100	Tp. Glenelg, " "	Natural causes.
8	Elizabeth Irwin	F.	Farmer's widow	Ireland	100	" St. Vincent, Grey "	Old age.
9	Martha Lucas	F.	Widow	Ireland	101	" Tyendinaga, Hastings "	"
10	Amelia VanCott	F.	"	Connecticut, U. S	100	Belleville, " "	General debility hastened by a fall.
11	Janet Christie Smith	F.	"	Scotland	101	Tp. Bosanquest, Lambton "	Bowel complaint.
12	Thomas Ross	M.	Pauper	Scotland	107	" Adelaide, Middlesex "	Old age.
13	Isabella Sexton	F.	Widow	Scotland	107	" Eckfrid, " "	"
14	Janet McLachlin	F.	Farmer's wife	Scotland	100	" Lobo, " "	"
15	Diana Calphas	F.	Slave's widow	Kentucky, U. S	115	" Westminster " "	"
16	Jacob Abdalla	M.	Negro labourer	Ireland	104	Ottawa, Carleton "	Paralysis.
17	Margaret Bambridge	F.	Widow	Ireland	102	Tp. Manvers, Northumberland and Durham Counties	Old age.
18	Martha Tuck	F.	"	England	105	Tp. Haldimand, Northumberland and Durham County (United)	"
19	Caroline Bomaire	F.	"	Vermont, U. S	114	Tp. Thorah, Ontario County	"
20	William Patterson	M.	Labourer	Philadelphia, U. S	100	" S. Norwich, Oxford "	Dropsy.
21	Charles McCarty	M.	Farmer	Canandague, U. S	103	" Blenheim, " "	Old age.
22	William Casey	M.	"	Ireland	103	" Galway, Peterboro' "	"
23	Sarah Cole Delong	F.	Widow	Adolphustown, Canada	107	" Ameliasburgh, Prince Edward Co.	Accident (by a fall).
24	James Lamrock	M.		Ireland	103	Hamilton, Wentworth County	Old age.
25	Phœbe Grant	F.	Farmer's wife	Germany	107	Tp. Markham, York "	"
26	James Mitchell	M.	Farmer	Ireland	100	" " " "	"
27	John Lunnan	M.	Whale fisher	Scotland	105	" King, " "	Age (not disease).
28	Mary Ann Calahan	F.	Labourer's wife	London, England	112	" " " "	Extreme age.
29	Milton Raglin	M.	Farmer	United States	100	" Raleigh, Kent "	Old age.
30	Sarah Marsh	F.	Widow	Georgetown, N. B	106	Vil. Ridgetown, Kent "	"
31	Joseph Menumier	M.	Farmer	Grand Chicot, Quebec.	105	Tp. Alfred, Prescott and Russell Co	"
32	William Hodgins	M.	"	Ireland	105	" Essa, Simcoe County	"
33	Michael Carrier	M.	Labourer	Lower Canada	106	" Bedford, Frontenac County	"
34	Moses Mullingham	M.	None	Ireland	108	Kingston, " "	"
35	Ann Lytle	F.	"	County Cavan, Ireland	104	Lindsay, Victoria "	"

TABLE 18.

Nationalities of Decedents over Sixty Years of Age.

—	English.	Irish.	Scotch.	Canadian.	American.	German.	French.	Swiss.	Other Countries.	Unknown.	Total.
Deaths between 60 and 70....	316	471	244	346	72	58	9	3	4	34	1557
" 70 " 80....	378	548	327	431	89	78	7	1	6	38	1903
" 80 " 90....	204	417	229	189	109	60	6	3	0	37	1254
" 90 " 100....	28	62	35	30	25	5	2	......	......	3	190
" 100 " upw'rds	4	8	7	3	8	2	... .	......	1	.....	33
Total Deaths over 60 ...	930	1506	842	999	303	203	24	7	11	112	4937

TABLE 19.

Quarterly Return of Deaths in 1883.

	Males.	Females.	Totals.	Per cent. of the whole.
Quarter ending 31st March	2906	2754	5660	26.9
" " 30th June	2804	2710	5514	26.2
" " 30th September	2813	2479	5292	25.1
" " 31st December	2430	2153	4583	21.8
	10953	10096	21049	100.0

TABLE 20.

Monthly Return of Deaths in 1883, in Rotation According to Numbers.

	Males.		Females.		Totals.
March	1075	March	1075	March	2150
April	1004	April	1047	April	2051
August	972	May	896	August	1868
May	962	August	887	May	1849
January	949	January	869	January	1818
July	924	February	810	July	1734
September	917	July	797	September	1714
February	882	September	795	February	1677
June	838	June	767	June	1605
October	813	December	757	October	1570
December	811	October	704	December	1515
November	806	November	692	November	1498
	10953		10096		21049

TABLE 21.

The following is a Record of the Ten Highest Causes of Death for the years 1871, 1872, 1873, 1874, 1876, 1877, 1878, 1879, 1880, 1881, 1882, and 1883.

1871.		1872.		1873.		1874.		1876.		1877.	
Whole number of Deaths registered ... ... .9182		Whole number of Deaths registered 10745		Whole number of Deaths registered..... 11069		Whole number of Deaths registered 10352		Whole number of Deaths registered 18623		Whole number of Deaths registered ...... .20053	
Phthisis	1042	Phthisis	1120	Phthisis.....	1217	Phthisis	1143	Phthisis	2259	Phthisis	2157
Scarlatina	630	Scarlatina	642	Old Age...... ...	778	Pneumonia	642	Old Age...........	1405	Old Age...........	1661
Pneumonia	508	Old Age	545	Lung Disease......	533	Old Age...........	536	Diphtheria	861	Infantile Debility..	1164
Exhaustion	467	Pneumonia	514	Typhoid Fever	401	Typhoid Fever.....	369	Pneumonia	786	Pneumonia	1050
Old Age	414	Diarrhœa..........	407	Heart Disease	399	Heart Disease......	351	Lung Disease......	662	Diphtheria	964
Heart Disease.....	333	Heart Disease......	350	Cerebro-spinal Meningitis......	324	Diarrhœa..........	334	Heart Disease.....	569	Scarlet Fever......	717
Typhoid Fever.....	261	Dysentery	342	Stomach Disease...	321	Enteritis...........	283	Convulsions........	544	Heart Disease	697
Dropsy............	241	Exhaustion	332	Brain Disease......	278	Convulsions.	267	Diarrhœa..........	539	Diarrhœa	666
Convulsions	209	Typhoid Fever.....	329	Pneumonia........	276	Dropsy............	239	Typhoid Fever	436	Convulsions	573
Diarrhœa..........	207	Brain Disease......	318	Cholera Infantum .	276	Lung Disease......	231	Dropsy............	381	Enteritis	497

No Repot in 1875.

TABLE 21—*Continued.*

1878.		1879.		1880.		1881.		1882.		1883.	
Whole number of Deaths registered 17808		Whole number of Deaths registered......... 17958		Whole number of Deaths registered.........19802		Whole number of Deaths registered.........22821		Whole number of Deaths registered. 21800		Whole number of Deaths registered.........21059	
27 Phthisis..........	1999	Phthisis.	2065	Phthisis.	2154	Phthisis	2397	Phthisis..........	2464	Phthisis	2500
Old Age..........	1722	Old Age	1749	Old Age..........	1658	Old Age	1972	Anæmia..........	1895	Old Age	1731
Infantile Debility..	1100	Infantile Debility..	955	Infantile Debility..	1300	Infantile Debility..	1481	Old Age	1841	Anæmia	1600
Diphtheria	986	Pneumonia........	942	Pneumonia........	1257	Diphtheria	1171	Pneumonia........	1322	Pneumonia........	1335
Pneumonia..	826	Heart Disease	784	Diphtheria	822	Pneumonia........	1137	Diphtheria	1239	Heart Disease	921
Heart Disease.	621	Diphtheria	574	Heart Disease	760	Heart Disease.....	886	Heart Disease	753	Diphtheria	709
Convulsions..	454	Convulsions	445	Convulsions	518	Diarrhœa..........	818	Typhoid Fever.....	555	Convulsions	548
Enteritis	415	Dropsy...........	400	Bronchitis........	438	Typhoid Fever	616	Scarlatina...... ..	543	Bronchitis	497
Diarrhœa	401	Enteritis	393	Croup............	429	Croup...........	533	Diarrhœa....	497	Diarrhœa.........	471
Typhoid Fever	379	Diarrhœa	340	Congestion of Lungs	419	Convulsions	509	Convulsions	492	Typhoid Fever	469

TABLE 22.—Shewing the number of Deaths in each of the ten highest Causes of Deaths centage to the total deaths in each

COUNTIES.	Population per Census of 1881.	Total No. of Deaths.	Ratio per 1000 of Population.	Phthisis.			Old Age.			Anæmia.		
				No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.
Algoma and Thunder Bay	20320	135	6.7	7	5.2	0.3	....	....	....	16	11.8	0.8
Brant	33869	382	11.3	43	11.2	1.2	26	6.8	0.8	13	3.4	0.4
Bruce	64774	479	7.4	45	9.4	0.7	48	10.0	0.7	65	13.5	1.0
Carleton	64103	1479	23.0	148	10.0	2.5	80	5.4	1.2	167	11.3	2.6
Dufferin	20536	174	8.4	25	14.3	1.2	18	10.3	0.9	20	11.5	0.9
Elgin	42361	330	7.7	41	12.4	1.0	33	10.0	0.8	17	5.1	0.4
Essex	46559	587	12.6	83	14.1	1.7	52	8.8	1.1	67	11.4	1.4
Frontenac	42555	674	15.8	97	14.4	2.3	74	10.9	1.7	41	6.1	0.9
Grey	70528	452	6.4	34	7.5	0.4	66	14.6	0.9	27	6.0	0.3
Haldimand	24991	188	7.5	34	18.0	1.3	14	7.4	0.6	6	3.2	0.2
Halton	21919	207	9.4	23	11.1	1.0	19	9.1	0.9	6	2.9	0.3
Hastings	55192	574	10.4	103	17.9	1.8	68	11.8	1.2	36	6.2	0.6
Huron	76525	627	8.2	76	12.1	1.0	68	10.8	0.9	40	6.3	0.5
Kent	54335	502	9.2	58	11.5	1.6	44	8.7	0.8	49	9.7	0.9
Lambton	52034	426	8.1	52	12.2	1.0	26	6.1	0.5	32	7.5	0.6
Lanark	33975	255	7.5	46	18.0	1.3	30	11.7	0.9	25	9.8	0.7
Leeds and Grenville	60164	570	9.4	78	13.6	1.3	68	11.9	1.1	48	8.4	0.8
Lennox and Addington	26484	261	9.8	41	15.7	1.5	36	13.8	1.3	14	5.3	0.5
Lincoln	31563	401	12.7	54	13.4	1.6	24	6.0	0.7	25	6.2	0.8
Middlesex	93081	976	10.4	97	9.9	1.4	86	8.8	0.9	53	5.4	0.5
Muskoka and Parry Sound	27204	257	9.4	16	6.2	0.6	8	3.1	0.3	31	12.0	1.1
Norfolk	33527	297	8.8	32	10.7	0.9	15	5.0	0.4	25	8.4	0.7
Northumberland and Durham	77390	691	8.9	117	16.9	1.5	77	11.1	1.0	31	4.5	0.4
Ontario	48812	576	11.8	60	10.4	1.2	39	6.7	0.8	31	5.4	0.6
Oxford	50159	561	11.2	73	13.0	1.4	51	9.1	1.0	31	5.5	0.6
Peel	26175	263	10.0	36	13.7	1.3	27	10.2	1.0	17	6.4	0.6
Perth	53686	440	8.2	50	11.3	0.9	44	10.0	0.8	30	6.8	0.5
Peterborough	34648	409	11.8	46	11.2	1.3	37	9.0	1.1	29	7.1	0.8
Prescott and Russell	38022	391	10.2	45	11.5	1.2	34	8.7	0.9	81	20.7	2.1
Prince Edward	21045	250	11.9	35	14.0	1.6	35	14.0	1.6	12	4.8	0.6
Renfrew	40246	321	7.9	37	11.5	0.9	26	8.1	0.6	36	11.2	0.9
Simcoe	74903	610	8.1	58	9.5	0.8	52	8.5	0.7	36	5.9	0.5
Stormont, Dundas and Glengarry	66017	477	7.2	79	16.5	1.2	73	15.3	1.1	40	8 4	0.6
Victoria	35163	363	10.3	44	12.1	1.2	28	7.7	0.8	24	6.6	0.7
Waterloo	42735	493	11.5	50	10.1	1.2	44	8.9	1.0	20	4.0	0.5
Welland	31771	318	10.0	31	9.7	1.0	21	6.6	0.6	14	4.4	0.4
Wellington	66189	714	10.8	86	12.0	1.3	62	8.6	0.9	67	9.3	1.0
Wentworth	66952	1213	18.1	138	11.3	2.1	65	5.3	1.0	67	5.5	1.0
York	153098	2726	17.8	282	10.3	1.8	113	4.1	0.7	211	7.7	1.3
Total	1923610	2104 9	10.9	2500	11.9	1.3	1731	8.2	0.9	1600	7.6	0.8

in the Counties of the Province, with the Population of each County, and also the per-County, and ratio to Population.

Pneumonia.			Heart Disease.			Diphtheria.			Convulsions.			Bronchitis.			Diarrhœa.			Typhoid Fever.		
No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.	No.	Per cent.	Ratio per 1000 of Population.
11		0.5	7	5.1	0.3	8	5.9	0.4	6	4.4	0.2	2	1.4	0.1	1	0.7	0.05	3	2.2	0.1
26	6.8	0.8	21	5.5	0.6	29	7.6	0.8	6	1.5	0.2	8	2.1	0.2	3	0.8	0.1	17	4.4	0.5
21	4.3	0.3	19	3.9	0.3	13	2.7	0.2	9	1.8	0.1	10	2.1	0.2	6	1.2	0.1	8	1.6	0.1
53	3.6	0.8	52	3.5	0.8	46	3.1	0.7	22	1.5	0.3	20	1.3	0.3	85	5.7	1.3	27	1.8	0.4
9	5.2	0.4	5	2.8	0.2	1	0.5	0.05	4	2.3	0.2	1	0.5	0.05	....	....	....	4	2.3	0.2
30	9.1	0.7	12	3.6	0.3	5	1.5	0.1	7	2.1	0.2	7	2.1	0.2	8	2.4	0.2	9	2.7	0.2
35	5.9	0.7	24	4.1	0.5	31	5.2	0.7	19	3.2	0.4	7	1.2	0.1	14	2.3	0.3	15	2.5	0.3
26	3.8	0.6	29	4.3	0.7	5	0.7	0.1	12	1.8	0.3	17	2.5	0.4	8	1.1	0.2	11	1.6	0.2
38	8.4	0.5	9	2.0	0.1	13	2.8	0.2	9	2.0	0.1	14	3.1	0.2	3	0.6	0.04	7	1.5	0.1
9	4.7	0.3	19	10.1	0.8	6	3.2	0.2	10	5.3	0.4	2	1.1	0.1	3	1.6	0.1	2	1.1	0.1
10	4.8	0.4	12	5.8	0.5	7	3.3	0.3	7	3.3	0.3	4	1.9	0.2	2	0.9	0.1	9	4.3	0.4
43	7.5	0.8	25	4.3	0.4	16	2.8	0.3	4	0.7	0.07	8	1.4	0.1	12	2.1	0.2	7	1.2	0.1
40	6.3	0.5	38	6.0	0.5	33	5.2	0.4	13	2.1	0.2	8	1.2	0.1	8	1.2	0.1	14	2.2	0.2
30	5.9	0.5	24	4.7	0.4	8	1.5	0.1	15	3.0	0.3	8	1.6	0.2	15	3.0	0.3	18	3.6	0.3
34	7.9	0.6	20	4.7	0.4	11	2.5	0.2	14	3.3	0.3	5	1.2	0.9	3	0.7	0.05	12	2.8	0.2
21	8.2	0.6	8	3.1	0.2	20	7.8	0.6	3	1.2	0.1	3	1.1	0.1	3	1.1	0.1	6	2.3	0.2
31	5.4	0.5	25	4.4	0.4	68	11.9	1.1	6	1.0	0.1	7	1.2	0.1	3	0.5	0.05	8	1.4	0.1
13	4.9	0.5	10	3.8	0.4	8	3.1	0.3	9	3.4	0.3	1	0.4	0.04	2	0.7	0.07	4	1.5	0.1
31	7.7	1.0	24	6.0	0.7	9	2.2	0.3	8	2.0	0.2	13	3.2	0.4	2	0.5	0.06	10	2.4	0.3
73	7.4	0.8	59	6.0	0.6	8	0.8	0.1	27	2.7	0.3	18	1.8	0.2	36	3.6	0.4	24	2.4	0.2
9	3.5	0.3	6	2.3	0.2	7	2.7	0.2	14	5.4	0.5	10	3.9	0.4	1	0.4	0.04	7	2.7	0.2
14	4.7	0.4	20	6.7	0.6	7	2.3	0.2	9	3.0	0.3	6	2.0	0.2	8	2.7	0.2	9	3.0	0.3
50	7.2	0.6	27	3.9	0.3	7	1.0	0.1	13	1.8	0.2	14	2.0	0.2	10	1.4	0.1	10	1.4	0.1
41	7.1	0.8	16	2.8	0.3	21	3.6	0.4	13	2.2	0.3	19	3.3	0.4	12	2.1	0.2	23	4.0	0.5
35	6.2	0.7	35	6.2	0.7	34	6.1	0.6	16	2.8	0.3	12	2.1	0.2	7	1.2	0.1	13	2.3	0.2
20	7.6	0.7	15	5.7	0.5	17	6.4	0.6	2	0.7	0.08	4	1.5	0.1	4	1.5	0.1	6	2.3	0.2
30	6.8	0.6	16	3.6	0.3	11	2.5	0.2	12	2.7	0.2	14	3.2	0.3	6	1.3	0.1	3	0.7	0.05
29	7.1	0.8	19	4.6	0.5	15	3.6	0.4	11	2.7	0.3	8	1.9	0.2	12	2.9	0.4	6	1.4	0.2
19	4.8	0.5	9	2.3	0.2	26	6.6	0.7	6	1.5	0.1	4	1.0	0.1	11	2.8	0.3	10	2.5	0.2
15	6.0	0.7	6	2.4	0.3	3	1.2	0.1	4	1.6	0.2	5	2.0	0.2	....	...	....	5	2.0	0.2
14	4.3	0.3	15	4.6	0.4	22	6.8	0.5	5	1.5	0.1	10	3.1	0.2	10	3.1	0.2	6	1.8	0.1
47	7.7	0.6	21	3.4	0.3	20	3.3	0.3	13	2.1	0.2	22	3.6	0.3	7	1.1	0.1	11	1.8	0.1
13	2.7	0.2	16	3.3	0.2	14	2.9	0.2	7	1.4	0.1	8	1.6	0.1	6	1.2	0.1	2	0.4	0.03
25	6.8	0.7	13	3.6	0.3	6	1.6	0.2	12	3.3	0.3	11	3.0	0.3	8	2.2	0.2	4	1.1	0.1
31	6.3	0.7	28	5.6	0.7	14	2.8	0.3	31	6.3	0.7	11	2.2	0.2	20	4.0	0.5	6	1.2	0.1
28	8.8	0.8	17	5.3	0.5	7	2.2	0.2	19	6.0	0.6	13	4.1	0.4	3	0.9	0.1	7	2.2	0.2
64	8.9	0.9	34	4.7	0.5	22	3.1	0.3	12	1.6	0.2	15	2.1	0.2	11	1.5	0.1	18	2.5	0.3
87	7.1	1.3	70	5.7	1.0	26	2.1	0.4	30	2.4	0.4	54	4.4	0.8	38	3.1	0.5	19	1.5	0.3
180	6.6	1.2	96	3.5	0.6	85	3.1	0.5	109	4.0	0.7	94	3.4	0.6	80	2.9	0.5	89	3.2	0.6
1335	6.3	0.6	921	4.3	0.4	709	3.3	0.3	548	2.6	0.3	497	2.3	0.2	471	2.3	0.2	469	2.2	0.2

TABLE 23.—Shewing the number of Deaths in each of the ten highest causes number of Deaths, also Ratio of each cause of

CITIES.	Population per census of 1881.	Total number of Deaths.	Ratio per 1000	Phthisis.			Anæmia.			Pneumonia.		
				No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.
Toronto	91240	2040	22.3	217	10.6	2.4	170	8.3	1.8	144	7.0	1.6
Hamilton	35961	822	22.8	97	11.8	2.7	52	6.3	1.5	49	5.9	1.4
Ottawa	27412	1211	44.2	114	9.4	4.1	147	12.1	5.3	37	3.0	1.3
London	19746	280	14.2	27	9.6	1.3	18	6.4	0.9	16	5.7	0.8
Kingston	14091	384	27.2	53	13.8	3.7	29	7.5	2.0	13	3.3	0.9
Guelph	9894	150	15.2	22	14.6	2.2	19	12.6	1.9	6	4.0	0.6
St. Catharines	9631	166	17.2	27	16.2	2.8	9	5.4	0.9	12	7.2	1.2
Brantford	9616	159	16.5	20	12.6	2.0	8	5.0	0.8	12	7.5	1.2
Belleville	9516	164	17.2	40	24.4	4.2	6	3.6	0.6	4	2.4	0.4
St. Thomas	8367	91	10.9	10	10.9	1.1	6	6.6	0.7	9	9.9	1.7
Total	235474	5467	23.2	627	11.4	2.6	464	8.4	1.9	302	5.5	1.3

of Death in the following Cities of the Province with the percentage to the whole Death to 1000 of the population for 1883.

Old Age.			Heart Disease.			Diarrhœa.			Bronchitis.			Convulsions.			Meningitis.			Typhoid Fever.		
No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.	No.	Per cent.	Ratio per 1000.
59	2.9	0.6	65	3.2	0.7	66	3.2	0.7	81	3.9	0.9	84	4.1	0.9	61	3.0	0.7	74	3.6	0.8
29	3.5	0.8	51	6.2	1.4	33	4.0	0.9	38	4.6	1.0	22	2.6	0.6	33	4.0	0.9	11	1.3	0.3
49	4.0	1.8	41	3.4	1.5	81	6.7	2.9	16	1.3	0.6	13	1.1	0.5	32	2.6	1.1	23	1.9	0.6
16	5.7	0.8	9	3.2	0.4	11	3.9	0.5	4	1.4	0.2	15	5.3	0.7	4	1.4	0.2	11	3.9	0.5
32	8.3	2.3	16	4.1	1.1	2	0.5	0.1	15	3.9	1.0	8	2.1	0.5	3	0.8	0.2	5	1.3	0.3
11	7.3	1.1	9	6.0	0.9	4	2.6	0.4	1	0.6	0.1	2	1.3	0.2	3	2.0	0.3	......	.....	.....
5	3.0	0.5	10	6.0	1.0	2	1.2	0.2	8	4.8	0.8	2	1.2	0.2	4	2.4	0.4	4	2.4	0.4
8	5.0	0.8	7	4.4	0.7	....	....	....	1	0.6	0.1	6	3.8	0.6	9	5.6	0.9	3	1.9	0.3
12	7.3	1.2	11	6.6	1.1	5	3.0	0.5	2	1.2	0.2	2	1.2	0.2	4	2.4	0.4	2	1.2	0.2
6	6.6	0.7	2	2.2	0.2	4	4.4	0.5	4	4.4	0.5	3	3.3	0.3	1	1.1	0.1	4	4.4	0.5
227	4.1	0.9	221	4.0	0.9	208	3.8	0.8	170	3.1	0.7	157	2.9	0.6	154	2.8	0.6	137	2.5	0.5

TABLE 24.

Ten Highest Causes of Death, with their percentage of the whole number of Deaths from specified causes, for the years 1877, 1878, 1879, 1880, 1881, 1882 and 1883.

1877.			1878.			1879.		
Whole number of Deaths from specified causes..19,260			Whole number of Deaths from specified causes..16,852			Whole number of Deaths from specified causes..16,897		
Diseases.	No. of Deaths.	Per cent. of the whole.	Diseases.	No. of Deaths.	Per cent. of the whole	Diseases.	No. of Deaths.	Per cent. of the whole.
Phthisis	2157	11.2	Phthisis	1999	11.8	Phthisis	2065	12.2
Old Age	1661	8.6	Old Age	1722	10.2	Old Age	1749	10.3
Infantile Debility	1164	6.0	Infantile Debility	1100	6.5	Infantile Debility	955	5.6
P umonia	1050	5.4	Diphtheria	986	5.8	Pneumonia	942	5.5
Diphtheria	964	5.0	Pneumonia	826	4.9	Heart Disease	784	4.6
Scarlet Fever	717	3.7	Heart Disease	621	3.6	Diphtheria	574	3.4
Heart Disease	697	3.6	Convulsions	454	2.1	Convulsions	445	2.6
Diarrhœa	666	3.4	Enteritis	417	2.4	Dropsy	400	2.3
Convulsions	573	2.9	Diarrhœa	401	2.3	Enteritis	393	2.3
Enteritis	497	2.5	Typhoid Fever	379	2.1	Diarrhœa	340	2.0

TABLE 24—*Continued.*

1880.			1881.			1882.			1883.		
Whole number of Deaths from specified causes............		19,152	Whole number of Deaths from specified causes............		21,997	Whole number of Deaths from specified causes......... ...		21,097	Whole number of Deaths from specified causes...........		20,299
DISEASES.	No. of Deaths.	Per cent. of the whole.	DISEASES.	No. of Deaths.	Per cent. of the whole.	DISEASES.	No. of Deaths.	Per cent. of the whole.	DISEASES.	No. of Deaths.	Per cent. of the whole.
Phthisis	2154	11.2	Phthisis	2397	10.8	Phthisis	2464	11.6	Phthisis	2500	12.3
Old Age..............	1658	8.6	Old Age.....	1972	8.9	Anæmia.............	1895	8.9	Old Age	1731	8.5
Infantile Debility.....	1300	6.7	Infantile Debility.....	1481	6.7	Old Age.............	1841	8.7	Anæmia	1600	7.8
Pneumonia	1257	6.5	Diphtheria	1171	5.3	Pneumonia..........	1322	6.2	Pneumonia	1335	6.5
Diphtheria	822	4.2	Pneumonia	1137	5.1	Diphtheria	1239	5.8	Heart Disease........	921	4.5
Heart Disease	760	3.0	Heart Disease	886	4.0	Heart Disease	753	3.5	Diphtheria..........	709	3.5
Convulsions	518	2.7	Diarrhœa............	818	3.7	Typhoid Fever.... ...	555	2.6	Convulsions.........	548	2.7
Bronchitis...........	438	2.3	Typhoid Fever........	616	2.8	Scarlatina	543	2.5	Bronchitis	497	2.4
Croup...............	429	2.2	Croup...............	533	2.4	Diarrhœa............	497	2.3	Diarrhœa...........	471	2.3
Congestion of Lungs ..	419	2.1	Convulsions	509	2.3	Convulsions	492	2.3	Typhoid Fever	469	2.2

TABLE 25.

Deaths by Occupations (for General Table *see* Appendix page clxx.)

Over the Average Age, 56.2 years.

OCCUPATIONS.	No. of Deaths.	Average Age at Death.	OCCUPATIONS.	No. of Deaths.	Average Age at Death.
Volunteers, Soldiers, and Pensioners	56	68.2	Masons	45	60.0
Gentlemen	195	68.0	Bricklayers	7	59.4
Millwrights	7	66.3	Tailors	54	59.3
Gardeners	30	62.8	Shoemakers	102	57.8
Farmers	2375	62.2	Carriage and Waggon-makers	24	57.1
Weavers	32	61.8	Coopers	19	56.5
Public Officials	69	60.1			

Under the Average Age.

OCCUPATIONS.	No. of Deaths.	Average Age of Death.	OCCUPATIONS.	No. of Deaths.	Average Age of Death.
Cabinet-makers	30	56.1	Cooks	2	45.0
Pedlars	7	56.1	Brewers and Distillers	6	44.6
Clergymen	42	56.0	Editors	2	44.5
Teachers, Male	41	55.4	Sailors	28	43.9
Merchants	127	55.2	Milliners and Dressmakers	28	43.5
Manufacturers	32	55.0	Stonecutters	20	43.0
Blacksmiths	67	55.0	Undertakers	2	43.0
Builders and Contractors	23	54.5	Seamstresses	32	42.2
Carpenters	175	53.8	Barbers	11	41.3
Labourers	919	52.1	Miners	3	41.6
Teamsters	33	51.7	Provincial Land Surveyors	3	41.3
Butchers	27	51.2	Tinsmiths	13	40.0
Millers	34	50.6	Saddlers and Harness-makers	20	38.6
Physicians	43	50.1	Railway Employees	58	38.5
Hunters and Fishermen	10	50.0	Tobacconists and Cigar-makers.	6	38.5
Chemists and Druggists	10	49.7	Watchmakers and Jewellers	10	38.3
Bakers and Confectioners	11	49.5	Machinists	25	37.3
Lawyers	16	49.0	Musicians	3	37.3
Plasterers	13	49.0	Moulders	22	36.5
Brickmakers	13	48.3	Servants, Female	70	36.5
Agents	48	48.1	Book-keepers, Salesmen and Clerks	104	35.0
Tanners and Curriers	9	48.1	Printers	23	32.5
Tavern-keepers	77	47.9	Artists	7	32.4
Other Mechanics	81	47.2	Dentists	4	30.0
Bankers	13	47.0	Teachers, Female	21	29.4
Engineers	32	46.4	Telegraph Operators	6	27.8
Lumbermen	15	45.8	Students	10	24.2
Painters	35	45.2			

TABLE 26.

A STATISTICAL CLASSIFICATION of the number of Deaths of persons whose Occupations were specified, giving the Number, Average and Aggregate Ages.

OCCUPATIONS.	NUMBER OF PERSONS.	AGES AT DEATH.	
		Aggregate.	Average.
CLASSES AND OCCUPATIONS	5537	311135	56.2
1. CULTIVATORS OF THE EARTH	2405	149700	62.2
2. MECHANICS	971	50166	51.5
3. LABOURERS	959	49988	52.1
4. MERCHANTS, FINANCIERS, AGENTS, ETC	432	20379	47.1
5. PROFESSIONAL MEN	488	27992	57.3
6. OTHER EMPLOYMENTS	152	7781	51.2
7. FEMALES AT WORK	130	5129	39.4
CLASS I.—CULTIVATORS OF THE EARTH	2405	149700	62.2
Farmers	2375	147816	62.2
Gardeners	30	1884	62.8
CLASS II.—MECHANICS	971	50166	51.5
Blacksmiths	67	3685	55.0
Brickmakers	13	628	48.2
Brewers and Distillers	6	268	44.6
Bricklayers	7	416	59.4
Barbers	11	455	41.3
Butchers	27	1384	51.2
Bakers, Confectioners	11	545	49.5
Carpenters	175	9415	53.8
Cabinetmakers	30	1683	56.3
Coopers	19	1073	56.4
Cooks	2	90	45.0
Contractors and Builders	23	1258	50.0
Masons	45	2692	60.0
Machinists	25	933	57.3
Moulders	22	803	36.5
Millers	34	1722	50.6
Millwrights	7	464	66.3
Miners	3	125	41.6
Other Mechanics	81	3824	47.2
Painters	35	1582	45.2
Printers	23	749	32.5
Plasterers	13	638	49.0
Stonecutters	20	861	43.0
Shoemakers	102	5897	57.8
Saddlers and Harnessmakers	20	772	38.6
Tinsmiths	13	516	40.0
Tobacconists and Cigarmakers	6	231	38.5
Tailors	54	3206	59.3
Tanners and Curriers	9	433	48.1
Undertakers	2	86	43.0
Watchmakers and Jewellers	10	383	38.3
Weavers	32	1978	61.8
Carriage and Waggonmakers	24	1371	57.1

TABLE 26—*Continued.*

OCCUPATIONS.	NUMBER OF PERSONS.	AGES AT DEATH.	
		Aggregate.	Average.
CLASS III.—LABOURERS	959	49988	52.1
Labourers	919	47889	52.1
Pedlars	7	393	56.1
Teamsters	33	1706	51.7
CLASS IV.—MERCHANTS, ETC	432	20379	47.1
Agents	48	2309	48.1
Book-keepers, Salesmen and Clerks	104	3639	35.0
Bankers	13	612	47.0
Chemists and Druggists	10	497	49.7
Manufacturers	32	1762	55.0
Merchants	127	7017	55.2
Tavern-keepers	77	3689	47.9
Telegraph Operators	6	167	27.8
Lumbermen	15	687	45.8
CLASS V.—PROFESSIONAL MEN	488	27992	57.3
Artists	7	227	32.4
Clergymen	42	2352	56.0
Dentists	4	120	30.0
Engineers	32	1487	46.4
Editors	2	89	44.5
Lawyers	16	782	49.0
Musicians	3	112	37.3
Physicians	43	2157	50.1
Public Officials	69	4150	60.1
Provincial Land Surveyors	3	124	41.3
Teachers, Male	41	2272	55.4
" Female	21	618	29.4
Gentlemen	195	13260	68.0
Students	10	242	24.2
CLASS VI.—OTHER EMPLOYMENTS	152	7781	51.2
Hunters and Fishermen	10	499	50.0
Railroad Employees	58	2233	38.5
Sailors	28	1229	43.9
Volunteers, Soldiers and Pensioners	56	3820	68.2
CLASS VII.—FEMALES AT WORK	130	5129	39.4
Domestic Servants	70	2558	36.5
Milliners and Dressmakers	28	1218	43.5
Seamstresses	32	1353	42.2

TABLE 27.

TEN OCCUPATIONS, giving the Highest Average Age in 1883, compared with 1882.

1882.	No. of Deaths.	Average Age at Death.	1883.	No. of Deaths.	Average Age at Death.
Millwrights	5	74.8	Volunteers, Soldiers and Pensioners	56	68.2
Volunteers, Soldiers and Pensioners	39	70.9	Gentlemen	195	68.0
Dentists	1	70.0	Millwrights	7	66.3
Gentlemen	170	68.2	Gardeners	30	62.8
Weavers	23	65.1	Farmers	2375	62.2
Gardeners	38	64.8	Weavers	32	61.8
Masons	28	64.4	Public Officials	69	60.1
Tailors	41	63.0	Masons	45	60.0
Hunters and Fishermen	6	62.8	Bricklayers	7	59.4
Farmers	2503	61.8	Tailors	54	59.3

TEN OCCUPATIONS, giving the Lowest Average Age at Death in 1883, compared with 1882.

1882.	No. of Deaths.	Average Age at Death.	1883.	No. of Deaths.	Average Age at Death.
Students	7	26.0	Students	10	24.2
Telegraph Operators	6	28.1	Telegraph Operators	6	27.8
Tobacconists and Cigar-makers	4	30.7	Teachers, Female	21	29.4
Printers	16	32.3	Dentists	4	30.0
Seamstresses	27	32.7	Artists	7	32.4
Book-keepers, Salesmen and Clerks	92	35.9	Printers	23	32.5
Teachers, Female	18	36.0	Book-keepers, Salesmen and Clerks	104	35.0
Domestic Servants	52	36.6	Servants, Female	70	36.5
Sawyers	4	36.7	Moulders	22	36.5

TABLE 28.

DEATHS BY OCCUPATIONS.

Ten Highest Causes of Deaths amongst those whose Occupations were given.

1882.	No.	Per cent. of Deaths from all causes.	1883.	No.	Per cent. of Deaths from all causes.
Old Age	877	16.5	Phthisis	1044	18.7
Phthisis	751	14.1	Old Age	923	16.5
Pneumonia	435	8.2	Heart Disease	382	6.8
Violent Deaths	375	7.0	Pneumonia	369	6.6
Heart Disease	331	6.2	Violent Deaths	366	6.5
Apoplexy	186	3.5	Paralysis	219	4.0
Typhoid Fever	181	3.4	Apoplexy	216	3.9
Cancer	176	3.3	Carcinoma (Cancer)	176	3.1
Dropsy	168	3.1	Anasarca (Dropsy)	150	2.7
Enteritis	107	2.0	Typhoid Fever	132	2.3

TEN OCCUPATIONS which returned the Highest number of Deaths from Phthisis.

1882. OCCUPATIONS.	Deaths from Phthisis	Deaths from all causes.	Rate per cent.	1883. OCCUPATIONS.	Deaths from Phthisis	Deaths from all causes.	Rate per cent.
Farmers	286	2519	11.4	Farmers	381	2375	16.0
Labourers	115	731	15.7	Labourers	169	919	18.3
Carpenters	34	173	19.6	Book-keepers, Salesmen and Clerks	49	104	47.1
Book-keepers, Salesmen and Clerks	28	92	30.4	Carpenters	45	175	25.7
Merchants	18	119	15.1	Shoemakers	21	102	20.5
Blacksmiths	18	81	22.3	Servants, Female	20	70	28.5
Shoemakers	18	94	19.1	Merchants	19	127	15.0
Seamstresses	16	27	59.2	Mechanics (kind not specified)	18	81	22.2
Gentlemen	15	170	8.8	Gentlemen	15	95	15.7
Teachers, Males	4 } 12	33 } 51	12.1	Teachers, Males	12 } 24	41 } 62	29.2
" Females	8	18	44.4	" Females	12	21	57.1

DEATHS.

(See Tables 1 and 2.)

In 1870, the number of deaths registered was only 6,905; whereas, in 1883, there were 21,049 deaths registered, 14,144 more than in 1870, or an average yearly increase of 1,080.

The ratio of deaths to population in 1870 was only 4.2 per 1,000; in 1883 it was nearly 11 per 1,000.

The tables appended for the year under review show that ten counties returned an increase in the number of deaths. Of these, the County of York returned an increase of 263; Wentworth, 148; Ontario, 78; Peterboro', 50; and Frontenac, 46; the increases in the other five were small.

In twenty-nine counties there was a decrease, particularly in the following ten, viz.: Grey returned 136 less; Middlesex, 127 less; Prince Edward, 98 less; Kent, 93 less; Essex, 90 less; Waterloo, 86 less; Leeds and Grenville (United), 76 less; Peel, 71 less; Perth, 71 less; and Welland, 67 less. The decrease in the remaining nineteen counties was not so large, ranging from 63 in Stormont, Dundas and Glengarry (United), to 2 in Lambton.

In twelve counties the ratio of deaths to population was higher than that of the whole Province, 11 per 1,000.

Carleton was the highest, 23 per 1,000; Wentworth next, with 18.1 per 1,000, York followed, with 17.8 per 1,000; and the other nine counties showed a death rate of from 15.8 in Frontenac to 11.3 in Brant. Grey returned the lowest rate, 6.4 per 1,000.

Deaths in the Cities.

The mortality in the ten cities was 507 in excess of 1882, but the increase in the population, which numbered 23,569, caused the ratio per 1,000 to remain about the same, viz.: 21.5 per 1,000.

Ottawa city again returns a very high death rate, 39.4 per 1,000, though not so large as in 1882, when it reached 44.9 per 1,000.

Kingston city stands next, with a ratio of 25.1 per 1,000. This high death rate is, however, in a measure accounted for by the many deaths of illegitimate children, which took place in a lying-in-hospital within its limits.

Toronto and Hamilton stand next, with a death rate for, Toronto, of 21.3 per 1,000; and for Hamilton, of 20.9 per 1,000. In both these cities the return of deaths was considerably in excess of the previous year, 1882. Toronto returned 310 more deaths, but Yorkville, which now forms a part of Toronto, is included in the returns for the first time. Hamilton returned 185 more deaths than in 1882.

The following cities also returned increases, viz.: Kingston, 71; St. Catharines, 10; St. Thomas, 9; and Brantford, 3. The other four cities report less deaths, viz.: Ottawa, 20 less; London, 36; Guelph, 18; and Belleville, 7.

St. Thomas returned the lowest death rate, 8.4 per 1,000. It must be either a very healthy city, or, which is more probable, the deaths are not all registered.

The following extracts from the reports relating to vital statistics of other countries will be found interesting:

Eighteen of the largest English towns returned a death rate of			25	per 1,000.
Eight of the principal towns of Scotland	"	"	23.4	"
Winnipeg, Manitoba,	"	"	27.5	"
Kingston, Jamaica,	"	"	34	"
Boston, Massachusetts, U.S.,	"	"	21.7	"
Baltimore, Maryland,	"	"	22.9	"
Providence, Rhode Island,	"	"	20	"
Ten cities of Ontario	"	"	21.5	"

Deaths at Different Ages.

(See Table 16.)

The deaths under the age of one year in 1883 numbered very nearly the same as in 1882 ; but. in consequence of the decrease in the total number of deaths, the ratio is larger, being 23.2 per cent. of the whole, while in 1882 it was 22.3 per cent.

Between the ages of one and five years, there was a decrease of 727 deaths, reducing the percentage from 13.6 to 10.5 of all the deaths.

The total deaths under five years numbered 7,097, being 33.6 per cent. of all the deaths registered. In 1882, there were 7,816 deaths in the same period, or 35.9 per cent. of all.

In England, the percentage of deaths under five years was 39.7 ; in Kingston, Jamaica, 41 per cent. ; in Vermont, U.S., 27 per cent. ; in Massachusetts, 32 per cent. ; in New Hampshire, 21 per cent. ; and in Rhode Island, 30 per cent.

The decrease in the number of deaths registered appears to have been principally of those between one and five years of age, and between five and ten years. This decrease is satisfactory (if not caused by non-registration).

There was a large increase in the number of deaths between twenty and thirty years in 1883, and also in the period between thirty and forty years. In the former the increase was 175, and in the latter period 160 deaths more were registered.

During the last eight years, from 1876 to 1883 inclusive, the mortality of children under one year has not varied to any great extent, the average percentage being 22.8 of the total deaths returned. The highest percentage was in 1877, 24.1, and the lowest in 1876, 21.4.

In the period from one to five years, during the same eight years, the average percentage was 13.3. The highest was 14.6 per cent. in 1877, and the lowest 10.5 in 1883.

Taking all the deaths registered in the two periods under one and between one and five years during the eight years referred to, the average percentage was 36.1. The highest was 38.7 in 1877 and the lowest 33.7 in 1883.

It is gratifying to find that 3,380 persons lived the allotted age of 70 years in 1883, this being 16 per cent. of all the deaths.

The tables also show that, of the 159,914 deaths recorded during the last eight years, 24,912, or nearly 16 per cent. of the whole, lived to be 70 years and upwards ; 8,824, or 5.5 per cent., lived to be 80 years and upwards ; and 1,979, or 1.2 per cent., lived to be 90 years and over. This longevity in 1883 compares favourably with other countries, as the following shows :

In Ontario 16	per cent.	of all who	died	lived	to be 70	years and over.
" Jamaica 12	"	"	"	"	"	"
" Massachusetts 16	"	"	"	"	"	"
" Rhode Island..... 15	"	"	"	"	"	"
" Vermont 25	"	"	"	"	"	"
" New Hampshire .. 24	"	"	"	"	"	"
" England 16	"	"	"	"	"	"

Centenarians.

(See Table 17.)

This table presents the usual number of deaths of persons reported to have lived a century and over.

The repeated enquiries made by the department for satisfactory proof that these persons had attained these extreme ages have not resulted in the production of any reliable data except in one instance.

According to the returns these centenarians were nearly all born in other countries, their ages are generally given on the personal testimony of themselves previous to death, without any corroborative evidence as to its correctness, and probably the same will apply to those who were born in Ontario.

Nationalities of Decedents over Sixty Years.

(See Table 18.)

It appears, as it did in previous years, that more Irishmen lived to be over 70 years than the natives of any other country.

According to the census of 1881, there were 139,031 persons then living in Ontario, who were born in England; 130,094 who were born in Ireland, and 82,173 who were born in Scotland; 1,661 of these Englishmen have since died at ages of 70 and over, or 1.2 per cent. of that nationality: 2,930 Irishmen or 2.2 per cent. have also died at those ages, and 1,606 Scotchmen also died or 1.9 per cent. of their number.

Canadians numbered 1,435,647 at that time, and 1,704 of them have died at 70 years and over .1 per cent.

Monthly and Quarterly Return of Deaths.

(See Tables 19 and 20.)

March was the most fatal month, both for males and females, and so it was in 1882. It was also the most prolific in births.

It is to be noted that an equal number of deaths of both sexes were registered in March, viz., 1,075 of each.

November was the least fatal month for both sexes, 806 males and 692 females having died in that month, being 269 males and 383 females less than in the most fatal month—March.

In ten out of the twelve months, more males than females died, and the excess of the death of males over females in the whole twelve months was 857, but there were 1,249 more births of males than females.

The deaths in the different quarters of the year were in regular descending order, as regards numbers, the first quarter being the highest, the second the next highest, the third quarter ranks next, and the fourth quarter reported the least number of deaths. The first half of the year, therefore, gave a higher number of deaths than the second half.

In Rhode Island, New Hampshire and Massachusetts, more females died than males, and the excess of male births was small. August, March and January were respectively the most fatal months in those States, and November and June the least so.

The Death Wave of the Year.

(See Diagram.)

By referring to the diagram, it will be observed that the two high points of mortality during the year were in March and August, and the two low points in June and November. They occupied the same position in 1882.

Taking January as a starting point for noticing the rise and fall of the mortality through the different months of the year, it is found that the number of deaths was 1,818, or about the monthly average of the year. There is a fall in the wave in Feburary, due rather to the number of days in that month being less, than to any decreased mortality.

In March a sudden and very rapid rise takes place in the wave, and it reaches the highest point, 473 more deaths being registered in that month than in the preceding one.

After reaching the highest point, the wave recedes gradually through April, and continues declining through May and June, where it reaches the first low point of the year, 213 less deaths having been recorded than in March, the highest point.

In July the wave rises, and continues rising through August, where it attains the second high point of mortality in the year.

The wave again falls through September. In October and November its progress is downwards, and in the latter month it reached the second low—being also the lowest—point in the year, the deaths being 652 less than in March, the highest point. A slight rise takes place in December.

The features of the wave of 1883 strongly resemble those of 1882. In January the wave was neither very high nor very low in either year. The same fall in both waves took place in February, and both show the same rapid rise in March, where they reached their highest points of mortality; similarly they fall in April, more rapidly, however, in 1882 than in 1883.

In May a slight difference occurs; the wave of 1882 rises a little, while in 1883 it continues to fall.

In June the two waves are found together again, and there reach their lowest points. They then rise side by side through July and August, where they attain their second high point. They both fall through September, October and November, but the wave of 1883 descends lower in September and October than the wave of 1882. They are, however, close together again in November, and both exhibit the lowest mortality of the year in that month.

The diagram also shows the death wave of 1881, which differs materially from both 1882 and 1883.

CLASSIFIED CAUSES OF DEATH.

(*See Appendix, page* xxxii.)

The following table shews the names of the different classes, also the number of deaths in each class with percentages:

CLASSES.	Deaths in 1883.	Percent'ge to whole number of deaths.	Deaths to 1,000 of population
Class I.—Zymotic diseases	3737	17.8	1.9
Class II.—Constitutional diseases	5511	26.2	2.8
Class III.—Local diseases	7312	34.8	3.8
Class IV.—Developmental diseases	2976	14.1	1.6
Class V.—Violent Deaths	763	3.6	.4
Cause not specified	750	3.5	.4
Total	21,049	100.0	10.9

Explanation of the Different Classes.

Class I.—Zymotic diseases, a term proposed by Dr. Farr, is usually employed as synonymous with preventible, and includes all those diseases such as Measles, Scarlatina, Diphtheria, Dysentery, Cholera Infantum, Bilious. Typhoid and Typhus fevers and Smallpox, which occur as endemics or epidemics.

Class II.—Constitutional diseases, which include Anæmia, Cancer, Rheumatism, Dropsy, Gout, Abscess, Hydrocephalus, Scrofula, and Phthisis or Consumption.

Class III.—Local diseases, under which are included all those diseases in which the functions of particular organs of the system are disturbed, such as Epilepsy, Apoplexy, Convulsions, Paralysis, Insanity, Heart Disease, Congestion of the Lungs, Bronchitis, Pleurisy, Pneumonia, Disease of the Stomach, Liver and Kidneys, etc.

Class IV.—Developmental diseases are those incidental to women, children, and old people.

Class V.—Deaths by violence or those which are caused by wounds, burns, drowning, poison, hanging, suicide, murder, etc.

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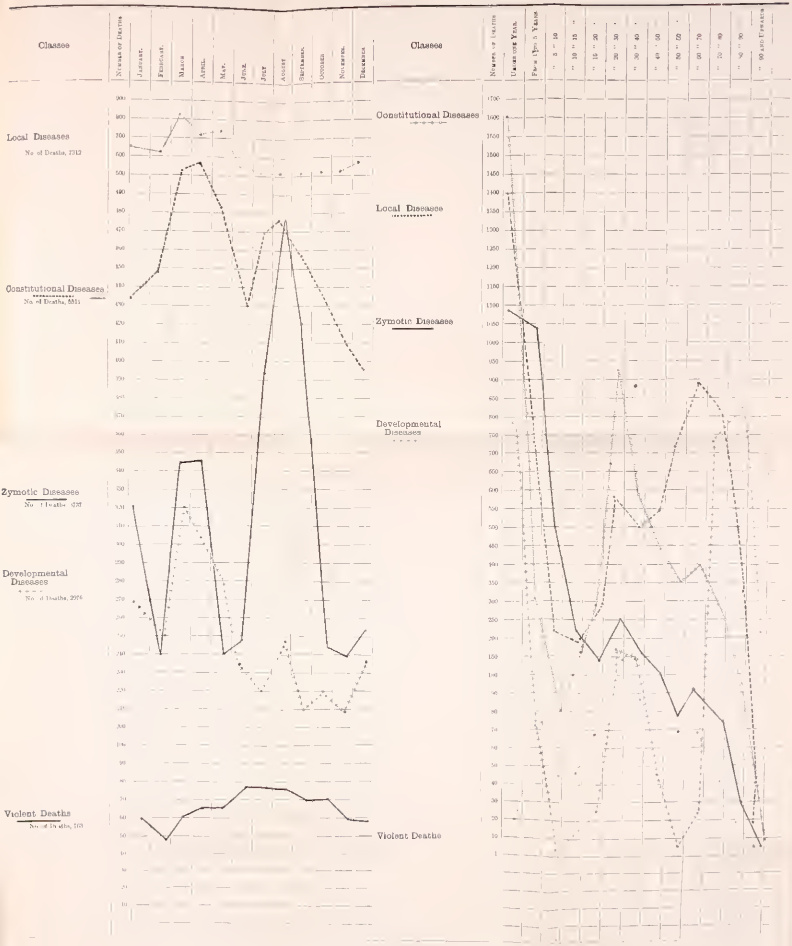
DIAGRAM SHEWING THE MORTALITY IN THE FIVE CLASSES OF DISEASES IN EACH MONTH, ALSO THE NUMBER WHO DIED IN EACH PERIOD OF LIFE IN 1883



Zymotic Diseases include Scarlatina, Diphtheria, Dysentery, Cholera Infantum, Fevers, Diarrhœa, etc., etc

Constitutional Diseases include Anæmia, Cancer, Rheumatism, Dropsy, Gout, Hydrocephalus, Consumption, etc., etc

Local Diseases include Epilepsy, Apoplexy, Convulsions, Paralysis, Insanity, Heart Disease, Bronchitis, Pneumonia, etc., etc.

Developmental Diseases include Childbirth, Old Age, Dentitio, Premature Birth, etc., etc

Violent Deaths include Accidental Deaths, Suicides and Homicides, etc.

Remarks on Class I.

(See Tables 21, 22, 23 and 24.)

The mortality in this class amounted to 3737, or 17.8 per cent. of all the deaths in the Province. Of this class of preventible diseases the most prevalent among them is Diphtheria, with 709 deaths, 368 males and 341 females. The number was, however, very much less than in 1882; in that year there were 1,239 deaths from Diphtheria, or 5.8 per cent. of all the deaths, whereas in 1883 there were only 709 deaths or 3.5 per cent., a falling off of 530 or 4.2 per cent. This is the lowest return from this disease since it first appeared on the list of ten highest causes of death in 1876.

This decrease was probably caused by the action of the Provincial Board of Health, lately established in this Province, which encouraged the formation of Local Boards of Health and also disseminated information respecting sanitary measures, and thus caused precautions to be taken to prevent the spread of this and other contagious diseases. The returns from the rural districts shew a decrease of 300, but it still prevails to a greater extent there than in the cities and towns.

Diphtheria was most fatal in January and least so in August. It was most prevalent in the winter months, as the three months, December, January, and February, returned 226 deaths from it, while July, August and September only returned 132.

The two periods of life from 1 to 5 years and from 5 to 10 years recorded more deaths from Diphtheria than the total of all the other periods. There were 276 deaths in the formerperiod and 223 in the latter, 499 in all. 65 died under one year, and only one in each of the periods from 40 to 50 years, 60 to 70 years and from 70 to 80 years. More males than females were victims to this cause of death.

The following counties returned the largest percentage of deaths from this cause:—Leeds and Grenville (United) returned 11.9 per cent. of all the deaths in that county; Lanark, 7.8 per cent.; Brant, 7.6 per cent.; Renfrew, 6.8 per cent.; Prescott and Russell (United) 6.6 per cent.; Peel 6.4 per cent.; and Oxford, 6.1 per cent.

In the following counties the disease was not so prevalent:—Dufferin returned only 0.5 per cent. of the deaths from all causes in that county; Frontenac, 0.7 per cent.; Middlesex, 0.8 per cent.; Northumberland and Durham (United), 1.0 per cent.; Kent, 1.5 per cent.: and Elgin, 1.5 per cent.

It will thus be seen that Leeds and Grenville (United) returned the highest rate, 11.9 per cent., and Dufferin the lowest, 0.5 per cent. In 1882 Prince Edward was the highest, with 13.8 per cent., and Wentworth, the lowest, with 2.7 per cent.

Table 22 also shews that in those counties where the percentage of deaths from this cause was high, the ratio of deaths to population was also high, and contrariwise, when the percentage was low the ratio was also low, especially in those counties which contain large cities.

In the counties of York, Wentworth, Middlesex and Carleton, which include Toronto, Hamilton, London and Ottawa, the percentage of deaths from this cause was low, being less than the average for the whole Province, 3.3 per cent., and the ratio to population was not higher than the average for the whole, being .3 per 1,000, except in Toronto and Hamilton where it was a little higher, .5 and .4 respectively.

From these figures it is concluded that Diphtheria is more prevalent in the rural districts than in the cities.

In the total return of deaths from the cities, there was a decrease in the number of deaths from Diphtheria of 34, which reduced the percentage from 3.3 to 2.3 per cent, although in one city, Brantford, there was an increaseof 18 deaths from this cause.

Ottawa shews a marked falling off. In 1882 there were 60 deaths from Diphtheria; in 1883 only 30 were so returned, a decrease of 50 per cent. Kingston, St. Catharines, Belleville and St. Thomas returned no deaths from this cause.

Diphtheria has always held a place in the ten highest causes of death, varying from fourth to sixth position. In the cities it does not appear on the list.

FEVERS.

1,086 deaths were caused by the different kinds of fever, and if they were grouped into one order, they would number more than Diphtheria.

Typhoid Fever.

More deaths were caused by this fever than from any other, viz., 469; males 249 and females 220, 43 per cent. of all the deaths from fevers There was, however, a decrease of 86 as compared with the number returned in 1882.

This fever is often caused by the want of proper sanitary regulations in houses and their surroundings, and the neglect of proper precautions to prevent its spreading. The remarks made in reference to Diphtheria, suggesting the enforcements of the provisions of the Provincial Health Act, apply with equal force to this disease.

October again returns the highest mortality from this fever of any month in the year, as it has done for several years past. In the three months, August, September and October, 176 persons died from it, being 37.5 per cent. of the total deaths from this disease. April, May and June were the least fatal months, only 84 deaths of Typhoid Fever were returned in that period of the year.

Regarding the ages of the decedents from this cause more died between 20 and 30 years of age than in any other decade, only 15 died under one year and very few over 60 years of age.

The six counties in which it was most fatal were Brant, Halton, Ontario, York, Kent and Norfolk; York returned the largest number, 89.

The percentage of the deaths in each county ranged from 4.4 in Brant, to 3. per cent. in Norfolk. In the following six counties the fever was the least prevalent, viz., Stormont, Dundas and Glengarry (United), Perth, Haldimand, Hastings, Victoria and Waterloo. Their percentage was from 1.2 in Hastings and Waterloo, to 0.4 in Stormont, Dundas and Glengarry (United).

More males than females died from this disease, as is the case in nearly all the diseases of this class.

Scarlet Fever.

This fever ranks next in mortality. 405 deaths were returned from it, 205 males and 200 females, but this is less by 138 than the number recorded in 1882.

March is always the most fatal month, but December was very nearly the same. 58 died in March, and 51 in December.

The first three months of the year returned 138 deaths from scarlet fever. August, September, and October returned only 46 deaths. Scarlet fever was, therefore, apparently more prevalent in the winter and spring months.

Those who died from this fever were nearly all under fifteen years, the returns shewing that 355 died at ages ranging from under one to fifteen years, only three died between 30 and 40, and none over that age.

It appears to have been rather prevalent in the counties of Carleton, Ontario and Simcoe.

It is not now on the list of ten highest causes of death, though it held the eighth place in 1882.

Of the others, cerebro spinal fever stands next. There were 133 deaths recorded under this head—69 males and 64 females.

The deaths from the remaining fevers, bilious, congestive, intermittent, and remittent, were not numerous.

DIARRHŒA.

The next highest cause of death in Class II. after fevers was Diarrhœa. 471 deaths were caused by it—261 males and 210 females.

The majority of the decedents died in the months of July, August, and September.

Many causes may be assigned for the mortality from this disease in those hot months. Among the principal are heat, unsuitable food, and impure water.

The disease was generally more fatal to the young than to the middle aged and old. 390 died under five years. It was not quite so prevalent as in 1882.

The counties of Carleton, Waterloo, Middlesex, Wentworth, Renfrew, and Kent suffered the most from this disease.

There was considerable increase in the deaths in the cities from this cause, particularly in Ottawa, which returns 41 more than in 1882; Hamilton also returns an increase of 5; Belleville, 2. The other cities had less deaths from Diarrhœa than in 1882. It stands ninth in the ten highest causes of death in the Province, and sixth in the list for the cities.

Cholera Infantum.

Cholera Infantum caused the death of 312 children, 51 less than in 1882, principally in the months of July, August, and September. 265 out of the 312 died in these three months, and all but four died under five years of age.

Croup.

Croup, like Cholera Infantum, was also less prevalent, the decrease in the number of deaths caused by it being 102. The three spring months, March, April, and May, were the most fatal, whereas the deaths from Cholera Infantum were more numerous in the summer months.

Nearly all died under ten years of age.

Measles.

The deaths from this cause show an increase of 102. In some counties it was quite prevalent, as in Kent, where there were 16 deaths caused by it in 1883, while there were none in 1882.

The increases in other counties were 12 in Frontenac; 10 in Victoria; 9 in Waterloo, and 8 in Wentworth. Some of these counties returned no deaths from this cause in 1882.

Dysentery and Whooping Cough.

There was a small decrease in the number of deaths from these causes.

The other diseases in class I. present no noticeable features.

CLASS II.

Constitutional Diseases.

There were 5,511 deaths in this class, 2,715 males and 2,796 females.

Phthisis or Consumption.

This is the principal disease of the class and again returns more deaths registered from it than from any other cause in any of the five classes. There were 2,500 persons diedfrom its deceptive but deadly attacks.

The increase in 1883 was not, however, very great, only 36 more than in 1882, but its percentage 11.9 of all the deaths is still very high. There were 258 more females than males succumbed to its effects.

Examining the statistics relating to Consumption for the last five years, it is found that certain seasons of the year are always more fatal than others. The following table plainly shews this fact:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1879..........	178	198	237	205	189	168	139	144	149	143	146	169	2065
1880..........	158	186	219	199	178	181	171	156	146	181	196	183	2154
1881..........	208	191	207	212	197	189	192	202	179	207	206	207	2397
1882..........	221	200	239	231	240	193	192	167	182	197	202	200	2464
1883..........	214	180	255	263	228	217	175	187	190	211	182	198	2500
Total.....	979	955	1157	1110	1032	948	869	856	846	939	932	957	11580

Those afflicted with this disease appear to revive during the warm months of summer, but gradually droop and die during the winter and spring months, particularly in the latter, as the table shews that during the spring months March, April and May, 3,299 died out of 11,580 deaths in the five years, while in the summer months only 2,571 died. The mortality fromthis disease in other countries is also the greatest in the spring months of the year.

The following tables shew that the greatest mortality from this cause was in the period of life between 20 and 30 years of age. Between 30 and 40 years, and between 40 and 50 years were also fatal periods. 7,215 or 62 per cent. of all died in these three periods. From 5 to 10 and from 80 to 90 there were few decedents.

Years.	Under one year.	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	20 to 30 years.	30 to 40 years.	40 to 50 years.	50 to 60 years.	60 to 70 years.	70 to 80 years.	80 to 90 years.	90 and over.	Unknown.	Total.
1879.........	55	58	18	42	199	627	391	271	167	120	52	7	2	56	2065
1880.........	56	63	32	36	217	674	396	254	155	127	64	10	....	70	2154
1881.........	71	73	28	52	222	763	442	270	200	141	57	7	....	71	2397
1882.........	81	89	44	55	246	779	440	283	192	127	56	6	....	66	2464
1883.........	91	71	23	52	229	830	503	292	145	120	64	13	....	67	2500
Total...	354	354	145	237	1113	3673	2172	1370	859	635	293	43	2	330	11580

Comparing the deaths with those of 1882 in the different counties, various changes will be seen. 18 counties returned more deaths from Phthisis than in 1882 and 17 a less number than in that year, whilst four counties returned exactly the same number in both years.

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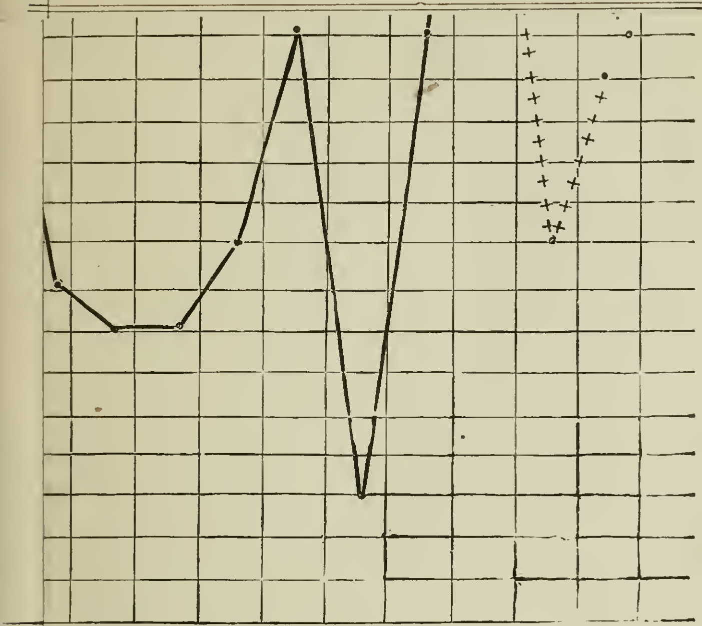

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returned 9 per cent., with a ratio of 4.1 per 1,000 ; Kingston returned 13.8 per cent., with a ratio of 3.7 per 1,000. The conclusion to be drawn from these data is that Phthisis was more prevalent in the cities than in the rural districts.

THESE TWO DIAGRAMS EXHIBIT—FIRST, IN No. 1, THE PREVALENCE OF SICKNESS FROM FIVE DISEASES AND SECOND, IN No. 2, THE MORTALITY FROM THOSE DISEASES—BY MONTHS FOR THE YEAR COMMENCING OCTOBER 1st, 1882, AND ENDING SEPTEMBER 30th, 1883.

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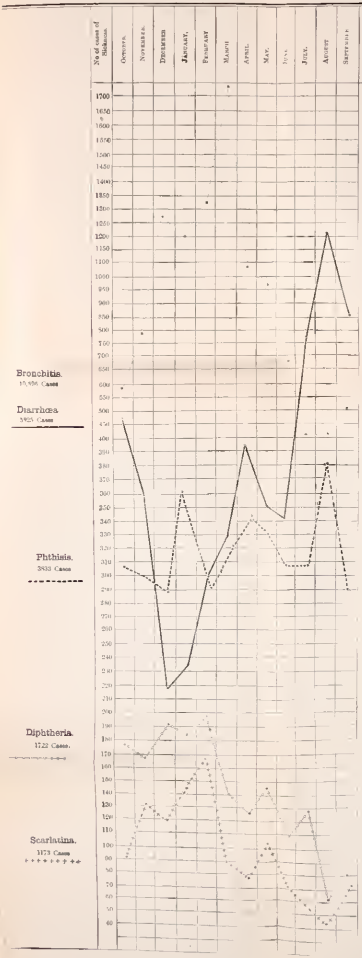

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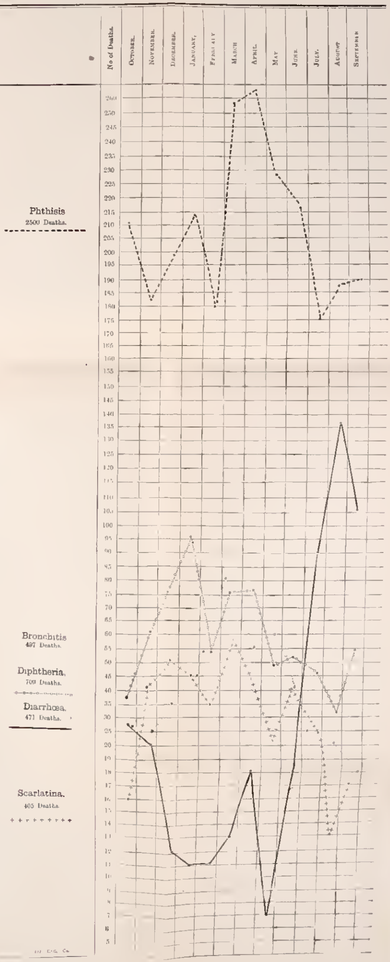

The county of Hastings always returned a high death rate from this disease and continues to do so in 1883. The number of deaths returned was 29 more, raising the percentage to 17.9, or within .1 of the highest county, Lanark, which returned 18 per cent. Frontenac shewed an increase of 25; Lambton, 24; Wellington, 20; Renfrew, 18; Oxford, 17; Lanark, 16; and Northumberland and Durham (United), 14. On the other hand, Middlesex returned a decrease of 30, Leeds and Grenville (United), 18; Welland, 18; Prince Edward, 16; Huron and Lincoln, 14 each.

In considering the prevalence of Phthisis in the different counties, the percentage of the decedents to the total number of deaths in the county to be dealt with must be taken into account. Thus, the County of York returns the largest number of deaths from Phthisis, viz., 282, but the percentage to the total deaths—2,726—was only 10.3, or below the average of the whole Province, which was 11.9, while the County of Lanark, though returning only 46 deaths from Phthisis, yet shewed a percentage of 18 of all the deaths in the county; Wentworth returned 138 deaths with a percentage of 11.3, while Carleton returned 148 deaths with a percentage of only 10.

Those counties which return the highest percentage of deaths from Phthisis generally return a very low ratio of deaths to population, probably caused by incomplete registrations. For instance, in Dufferin the ratio of deaths to population was only 8.4 per 1,000, while the percentage of deaths from Phthisis was 14.3; in Elgin the ratio was 7.7 per 1,000, the percentage 12.4; in Haldimand the ratio was 7.5 per 1,000, the percentage 18.0; in Hastings the ratio was 10.4, the percentage 17.9; in Huron the ratio was 8.2 per 1,000, the percentage 12.1; in Lanark the ratio was 7.5 per 1,000, the percentage 18.0; in Leeds and Grenville (united) the ratio was 9.4, the percentage 13.6; in Lennox and Addington the ratio was 9.8 per 1,000, the percentage 15.7; in Northumberland and Durham (united) the ratio was 8.9, the percentage 16.9; and in Stormont, Dundas and Glengarry (united) the ratio was 7.2, the percentage 16.5.

There is every reason to believe that in those counties which return so low a ratio, the registration of deaths is incomplete. If so, any deductions made from these high percentages might be misleading, but in the following counties, viz., Brant, Essex, Lincoln, Oxford, Hastings, Wellington and Waterloo, where the ratio of deaths to population and percentage of deaths from Phthisis to all the deaths are both high, it is apparent that this disease is prevalent to a large extent in those counties.

Dr. Bryce, Secretary of the Provincial Board of Health, in his Annual Report for 1883, advances the proposition that the prevalence of a disease should be based upon the ratio of deaths from any specific cause to 1,000 of the population in the county.

According to this plan, the counties which returned the highest percentage from Phthisis return a low ratio of deaths to population; thus, Hastings returned 17.9 per cent. of deaths from Phthisis, but the ratio of these deaths to 1,000 of the population of the County was only 1.8 or very little higher than the average for the whole Province 1.3. This may appear to conflict with the ratios given in a previous paragraph, but it should be understood that this ratio to population is of the deaths from Phthisis alone, whereas the ratios before alluded to have reference to the total deaths in the county from all causes.

Lanark returned 18 per cent. of all the deaths in that county from Phthsis, the ratio to population was 1.3 per 1,000; Dufferin returned 14 per cent. with a ratio of 1.2 per 1,000; Haldimand 18 per cent. with a ratio of 1.3 per 1,000; Lennox and Addington 15.7 per cent., with a ratio of 1.5 per 1,000; Stormont, Dundas and Glengarry (united) 16.5 per cent. with a ratio of 1.2 per 1,000.

The average percentage of deaths from Phthisis in the cities was 11.4, a little lower than for the whole Province, but every city, excepting St. Thomas, returned a very much higher ratio to population than the average for the whole Province. This will be seen by the following extracts from the table. Toronto returned only 10.6 per cent. of deaths from this cause, but the ratio to population was 2.4 per 1,000, nearly double the average for the Province; Hamilton returned 11.8 per cent., with a ratio of 2.7 per 1,000; Ottawa returned 9 per cent., with a ratio of 4.1 per 1,000; Kingston returned 13.8 per cent., with a ratio of 3.7 per 1,000. The conclusion to be drawn from these data is that Phthisis was more prevalent in the cities than in the rural districts.

The mortality from this disease in other countries is here given in comparison with Ontario.

In England the deaths from Phthisis were 9.2 per cent. of all, and 2.3 per 1,000 of the population.

In Ontario the deaths from Phthisis were 11.9 per cent. of all, and 1.3 per 1,000 of the population.

In Massachusetts, U.S., the deaths from Phthisis were 16.8 per cent. of all, and 3.0 per 1,000 of the population.

In Jamaica, West Indies, the deaths from Phthisis were 8.0 per cent. of all, and 1.8 per 1,000 of the population.

In New Hampshire, U.S., the deaths from Phthisis were 15.1 per cent. of all, and 2.1 per 1,000 of the population.

Anæmia.

Anæmia includes Infantile Debility, a general term given as the "cause of death" of a large number of infants whose disease had not been diagnosed by a medical man.

It also includes Atrophy or (Wasting), under which head are placed the deaths of people who died apparently without any particnlar disease, and without medical attendance.

The deaths recorded under this heading numbered 1,600, or nearly 300 less than in 1882. Of these 882 were males and 718 females.

In the cities the deaths were relatively more numerous, the percentage being 8.4 per cent. Guelph and Ottawa returned the highest percentage, 12.6 and 12.1 per cent., and Belleville the lowest, viz., 3.6 per cent.

The highest returns were from Prescott and Russell (united), being 20.7 per cent. of deaths in that county. Bruce returned 13.5 per cent. ; Muskoka and Parry Sound (united), 12 per cent. ; Carleton, 11.3 per cent. The average for the whole Province was 7.6 per cent.

The summer months were the most fatal. 1,297 or 81 per cent. of all the deaths from this cause, died under the age of one year.

The disease ranks third on the list of the ten highest causes of death in the Province, and second in those in the cities.

Carcinoma (Cancer).

This disease has become rather prevalent in the Province, increasing gradually every year. Although it has never appeared on the list of ten highest causes of death, yet in several years it has occupied the eleventh place.

In 1879, 278 deaths were recorded; in 1883 the mortality reached 403, being an increase of 125 or 44 per cent. in four years.

Cancer and the various kinds of tumour are included under this heading. The deaths of females from these diseases exceeded those of males by 17.

It was more prevalent in the counties of Huron, Middlesex, Northumberland and Durham (united), Wellington, and York, than in the other counties.

Anarsarca (Dropsy).

There were 374 deaths returned as due to Anarsaca. This is 19 less than in 1882 while it seems to be decreasing every year. In 1881 the records shew that 447 died from it. It was somewhat prevalent in Middlesex, Perth, Carleton, Bruce, and York.

In the years 1871, 1874, 1876 and 1879 it formed one of the ten highest causes of death ; but since the last mentioned year it has not been on the list.

More females than males died from Dropsy. The total deaths from Constitutional diseases shew an excess of 81 females over males.

Hydrocephalus and Rheumatism.

These two diseases returned 187 and 152 deaths respectively, there being a slight increase over the numbers returned in 1882. The males outnumbered the females.

The other causes of death in this class present no special features requiring notice.

CLASS III.

Local Diseases.

The diseases in this class which particularly deserve attention are, firstly: those affecting the nervous system, the most conspicuous being Apoplexy, Convulsions, Epilepsy, Paralysis, and Insanity. Secondly: diseases of the Circulatory System, including all those connected with the heart. Thirdly: Lung and Throat diseases such as Pneumonia, Bronchitis, Congestion of the Lungs, etc. Fourthly: those of the Digestive Organs.

Apoplexy and Convulsions.

Apoplexy and Convulsions, together returned 949 deaths, 401 from the first and 548 from the second, a large increase over the return of 1882.

Under Convulsions are included the deaths of many infants dying from "Fits." The deaths from Apoplexy were principally of those who had reached middle age.

In the cities there are more deaths returned from Convulsions, in consequence of the greater mortality of children in those places; thus, York (which includes Toronto) returned 109 deaths while Prince Edward, Renfrew, Lanark, Peel and other rural counties having no cities or large towns, only returned two or three cases of Convulsions.

Apoplexy is nearly equally distributed through all the counties, with one or two exceptions such as Middlesex which returned 28 deaths from this cause; Lambton, 19; Northumberland and Durham (united), 18; and Huron 16, considerably above the average of the Province.

There was nearly the same number of deaths in every month of the year from Apoplexy.

Two hundred and forty-two out of the whole 401 died between 50 and 80 years of age.

Convulsions holds the seventh place in the list of the highest causes of death, which place it has held since 1878 (except in 1881 and 1882) when it was last on the list. Apoplexy has never appeared in the list.

Brain Disease.

Under Brain Disease may be included Epilepsy, Paralysis, Meningitis Necrencephalus, Encephalitis, and Insanity. Together they returned 1,108 deaths, 621 males and 487 females, a slight increase over 1882.

None of these diseases have held positions in the ten highest causes of death, except in 1872 and 1873, when they were all classed under "Brain Disease." The deaths of males exceeded those of females by 134.

Diseases of the Circulatory System.

In this order, diseases of the heart predominate. The number of decedents is increasing yearly. In 1871 there were only 333 deaths recorded from this cause. In 1883 the mortality has increased to 921 or 176 per cent. It has held either the fifth or sixth place respectively in the list of highest causes of death every year since 1871, both in the cities and in the whole Province.

The percentage to all the deaths in the Province was 4.5; in the cities it was 4.0 per cent.; the ratio to population was 10.4 per 1,000 in the former, and .9 in the latter.

The highest number of deaths from this disease took place in May, in the other months the deaths averaged about the same number.

The period between 50 and 70 years was the most fatal, no less than 359 or 39. per cent. of the total number having died.

The percentage of deaths from this disease in the different counties ranged from 2.0 the lowest in Grey, to 10.1 the highest in Haldimand.

The mortality from Heart Disease was greater among females than males by 35.

Diseases of Lungs, Throat and Chest, Etc.

Chief amongst them was Pneumonia, which is fourth on the list of the ten highest causes of death and was never lower than fifth since 1871 except in 1873 when it was ninth. In 1874 it was as high as second on the list.

In 1871 only 508 deaths were recorded, whereas in 1883 there were 1,335. The increase has not been gradual, as in some years it was much lower than in the preceding year, and then would rise in the following year very rapidly ; this was partly owing to a want of proper classification of Lung Diseases.

Bronchitis.

There was an increase of 29 in the number of deaths from this disease.

It appears eigthth on the list, but did not receive a place in 1882.

The following counties returned more deaths from this cause than in 1882 : Wentworth, 24 more ; Muskoka and Parry Sound, 9 more ; Ontario and Welland, each, 8 more ; Lincoln and Grey, each, 7 more ; and Simcoe and Middlesex, each, 6 more.

The Disease reports made to the Provincial Board of Health shew that it was very prevalent in 1883, throughout the Province.

In those counties where the deaths from Bronchitis were numerous, the mortality from Consumption was low, being less than the average, except in Lincoln where it was greater.

The months of March, April and May were the most fatal (as they were for Phthisis and Pneumonia) numbering 196 deaths or 40 per cent. of all the deaths.

Similarly with Pneumonia the deaths from Bronchitis under five years of age were the most numerous, although a large number died between 60 and 80 years.

Diseases of the Stomach.

The deaths from these causes numbered 748, or 13 less than in 1882.

None of them have appeared in the list of the ten highest causes of death except Enteritis, which held the ninth place in 1874, the eight in 1878, and again the ninth in 1879.

Diseases of the Urinary Organs and Liver.

Amongst these are Hepatitis and Nephria and Nephritis, the latter two being Kidney diseases. 139 died from the former disease, and 239 from the latter two, being nearly the same number as in 1882.

CLASS IV.

Developmental Diseases.

In this class are grouped the deaths of children from Teething, Still-Births, Premature Births, etc.; also the deaths of women from diseases incidental to their sex, such as Child-birth, Abortion, etc., and the deaths from Old Age.

Dentition.

One hundred and fifty children, 78 males and 72 females, under five years of age are recorded as having died while teething, and probably many deaths from other causes were developed from this infantile complaint, such as convulsions, etc.

Still-Birth and Premature Birth.

There were 601 cases of Still-Birth and Premature Birth, or 348 males and 253 females, being 164 in excess of the number returned in 1882. Why this class of deaths increased so largely is a matter deserving of careful consideration.

Old Age.

The deaths of persons whose lives have been prolonged through many years, and who die apparently without any specific complaint were not so numerous as in 1882.

In 1881 the returns shew that 3,592 persons died at the age of 70 years and over. In 1882 3,475 died at those ages, and in 1883 the number was reduced to 3,380.

Old Age has however regained its former position as second on the list of the ten highest causes of death, in consequence of the large decrease in the number of deaths from Anæmia, which held the second place in 1882.

CLASS V.

Violent Deaths.

The lives of 763 persons, 617 males and 146 females, were shortened by violence of some kind.

The chief cause was wounds accidental or self-inflicted. 182 lost their lives by drowning. 82 were killed by cars, 20 less than in 1882. Suicides decreased 35.

Those who desire to study the other causes of death not specially noticed here, can do so by referring to the Tables in the Appendix.

Deaths by Occupations, Classified.

(See Tables 25 and 26.)

Although the deaths registered in the Province in 1883 were less, yet the number of persons included in the various classes was larger than in 1882 by 248, owing to the occupations of the decedents being more generally given. There was an increase in every class except "Cultivators of the Soil," which shewed a decrease of 136.

Not much difference is shewn in the average age of the different classes. "Cultivators of the Soil," Merchants and "Females at work" were a little higher and the others rather lower.

CLASS I.

Farmers and Gardeners.

The number of deaths of these workers was less in 1883 than in 1882; their average age was also less, but is still the highest age returned by any occupation, a strong testimony as to the healthfulness of these occupations.

CLASS II.

Mechanics.

The 33 trades included in this class returned 971 deaths, 75 more than in 1882, their average age being 51.5 years.

Three of them, Weavers, Millwrights and Masons averaged sixty years, but they only numbered 84 of the total deaths in the class; ten others were above the average of all the classes, 56.2 years.

The four trades, Carpenters, Shoemakers, Blacksmiths and Tailors, (the same as grouped together in 1882), returned 398 deaths or 41 per cent. of the class, nine more, but a less percentage than in 1882. Their average age, however, was 56 years, slightly in advance of 1882.

Of this group, tailors were again the longest lived, although their average age was not quite so high, but more died; the return shews 54 deaths of these mechanics at an average age of 59 3 years against 41 at 63 years in 1882. It is a great age when the nature of the occupation is considered, and exceeds the age of any of the professional men. In other countries their average age is high also. In Massachusetts their average age was 57 years, in Rhode Island 59, and in Vermont 54.

Seventeen of these trades had average ages less than that of the whole class. Among the lowest were those who worked in factories and ill ventilated rooms, or were closely confined at in-door work, such as printers, tobacconists, cigar-makers, saddlers and harness makers, jewellers and watchmakers, and moulders; they numbered 81, and their average age at death was only 36 years.

CLASS III.

Labourers.

Only three occupations were in this class; they, however, numbered 959, with an average age of 52.1 years.

Labourers returned 919 of them, their average age being 52.1 years. Their work is chiefly out of doors, and might be expected to make the length of life in this class more extended. Probably this would be so were it not for the dangers they are exposed to in their work, subjecting them to accidents, which, in 1883, resulted in the death of no less than 76 in early and middle life.

CLASS IV.

Merchants, Financiers, Agents, Etc.

The deaths in this class numbered 432 at an average age of 47.1 years, the lowest of any class except " Females at work." Some of them, however, died at ages above the average of this elsss, viz., merchants and manufacturers who lived to be 55 years.

The low average age of the class was caused by book-keepers, clerks and telegraph operators being included. Their average age is always low and in consequence affects the age of the whole.

CLASS V.

Professional Men.

Tho average age of the members of this class was 57.3 years, and they numbered 488.

The strictly professional class, clergymen, lawyers and physicians, have returned the same number of deaths 100 during the last three years, their average age for those years was 55, 53 and 52 years.

Public officials and gentlemen ranked the highest in the class; there was 264 of them died at an average age of 66 years.

A great difference appears between the ages of male and female teachers, the former averaged 55 years at the time of their death while the latter only reached 29 years. This may be accounted for by the fact that male teachers generally remain longer in the profession than females. When female teachers marry they usually retire from teaching, while male teachers continue teaching after their marriage, therefore the deaths among female teachers will be in many cases in early life.

CLASS VI.

Other Employments.

Four of the occupations in this class, hunters, fishermen, railroad employees and sailors, are of a precarious nature tending to violent deaths in early life, causing their average length of life to be low.

Railroad employees are often the victims of railroad accidents, their average age was only 38 years.

Volunteers, pensioners and soldiers attain a good age, as their deaths include many pensioners of the British army.

CLASS VII.

Females at Work.

Of these workers 130 were reported as dying at an average age of 39.4 years, an increase in their length of life of four years, as compared with those dying in 1882.

The average age of those seamstresses who died in 1883 was ten years longer than in 1882. A number of them were reported as having died at 60 years and over, an unusual age for this class of female workers.

The age of domestic servants remains the same as in 1882, viz., 36 years.

Deaths by Occupations.—Causes of Death.

See Table 28.

Only one change has taken place in this table. Enteritis does not appear and its place is taken by Paralysis.

Phthisis is first with an increase both in number and percentage.

The deaths of those persons who followed some occupation at the time of their death numbered more than in 1882, which accounts for the increase in the deaths from Phthisis.

Farmers returned the largest number, 381, or 16 per cent., but it was the lowest percentage of deaths from this disease of any on the list, except merchants and gentlemen, and their percentage was nearly the same, 15 per cent.

Old age is second with 228 more deaths, but the per centage was the same owing to the increase in the total deaths.

Heart disease has risen from fifth to third place; pneumonia returns less deaths with a less percentage.

Violent deaths rank one place lower, having returned a few less decedents, and a slightly less percentage.

More deaths are returned from apoplexy, but its position is one place lower. Very little difference appears between the number of deaths returned from cancer and dropsy in 1883, and the number returned in 1882.

Typhoid fever has decreased, 59 less deaths having occurred in 1883, and the percentage has fallen from 3.4 to 3.1.

I have the honour to be,

Sir,

Your obedient servant,

H. S. CREWE,
Inspector.

APPENDIX.

BIRTHS.

TABLE A.—BIRTHS BY MONTHS, 1883.

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	No. of Pairs of Twins.	Quadruplets.	Triplets.	Illegitimate.	Still Born.
Algoma and Thunder Bay:																		
Males	17	17	19	18	18	10	14	16	14	8	21	15	187	......	......	......	1	1
Females	12	14	20	19	16	15	8	16	13	13	9	13	168	......	......	......	1	1
Total	29	31	39	37	34	25	22	32	27	21	30	28	355	5	......	......	2	2
Brant:																		
Males	29	26	37	35	35	26	33	27	39	36	31	32	386	......	......	......	4	3
Females	31	26	33	31	36	27	38	31	28	26	38	30	375	......	......	......	4	4
Total	60	52	70	66	71	53	71	58	67	62	69	62	761	4	......	......	8	7
Bruce:																		
Males	49	70	67	65	66	51	63	62	62	67	56	63	741	......	......	......	4	3
Females	46	56	64	52	60	57	54	56	66	60	40	50	661	......	......	......	3	4
Total	95	126	131	117	126	108	117	118	128	127	96	113	1402	11	......	4	7	7
Carleton:																		
Males	84	93	114	88	81	93	93	67	62	84	50	80	989	......	......	......	271	2
Females	66	66	107	75	63	93	88	68	59	65	48	54	852	......	......	......	238	4
Total	150	159	221	163	144	186	181	135	121	149	98	134	1841	16	......	......	509	6
Dufferin:																		
Males	17	23	25	15	14	13	28	23	26	20	18	17	239	......	......	......	2	1
Females	14	16	10	14	13	14	18	16	18	20	20	25	198	......	......	......	1	2
Total	31	39	35	29	27	27	46	39	44	40	38	42	437	9	......	......	3	3
Elgin:																		
Males	16	32	32	38	21	34	36	38	43	41	24	36	391	......	......	......	6	1
Females	36	26	33	24	23	24	34	34	32	31	39	30	366	......	......	......	1	1
Total	52	58	65	62	44	58	70	72	75	72	63	66	757	6	......	......	7	2

Essex:																		
Males	77	65	60	63	46	61	59	66	62	68	54	51	732	......	......	......	4	1
Females	61	51	61	60	62	47	66	48	56	56	54	47	669	......	......	......	7	3
Total	138	116	121	123	108	108	125	114	118	124	108	98	1401	10	......	......	11	4
Frontenac:																		
Males	42	46	42	39	44	55	48	59	46	36	50	34	541	......	......	......	6	4
Females	44	50	47	57	32	47	51	51	36	43	48	38	544	......	......	......	7	3
Total	86	96	89	96	76	102	99	110	82	79	98	72	1085	9	......	......	13	7
Grey:																		
Males	63	47	59	63	54	53	59	67	54	67	62	52	700	......	......	......	3	5
Females	61	56	66	56	55	50	45	47	77	58	49	54	674	......	......	......	3	4
Total	124	103	125	119	109	103	104	114	131	125	111	106	1374	13	......	......	6	9
Haldimand:																		
Males	22	25	26	14	25	21	19	16	11	24	23	18	241	......	......	......	1	......
Females	8	18	20	21	25	26	25	18	13	19	20	19	232	......	......	......	......	......
Total	30	43	46	35	50	47	44	34	24	43	43	37	476	1	......	......	1	......
Halton:																		
Males	21	25	19	15	18	23	20	26	22	16	15	28	248	......	......	......	1	2
Females	24	18	15	19	17	17	18	15	23	14	17	23	220	......	......	......	4	......
Total	45	43	34	34	35	40	38	41	45	30	32	51	468	2	......	......	5	2
Hastings:																		
Males	45	44	39	38	40	51	36	34	48	47	35	46	503	......	......	......	3	5
Females	35	36	40	37	39	30	32	34	47	39	31	38	438	......	......	......	3	2
Total	80	80	79	75	79	81	68	68	95	86	66	84	941	6	......	......	6	7
Huron:																		
Males	65	60	77	69	62	63	54	57	81	65	84	67	804	......	......	......	4	2
Females	55	59	76	63	69	64	67	82	71	59	55	60	780	......	......	......	5	6
Total	120	119	153	132	131	127	121	139	152	124	139	127	1584	10	......	......	9	8
Kent:																		
Males	54	57	56	50	44	44	43	45	50	47	45	39	574	......	......	......	5	1
Females	53	30	45	49	31	45	40	40	44	43	43	38	501	......	......	......	2	1
Total	107	87	101	99	75	89	83	85	94	90	88	77	1075	10	......	......	7	2

TABLE A.—BIRTHS BY MONTHS, 1883—*Continued.*

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	No. of pairs of twins.	Quadruplets.	Triplets.	Illegitimate.	Still Born.
Lambton:																		
Males	65	59	60	53	43	45	47	50	49	57	45	58	631	.....	.....	.....	2	4
Females	52	57	51	45	58	36	41	38	55	49	43	43	568	.....	.....	.....	2	3
Total	117	116	111	98	101	81	88	88	104	106	88	101	1199	12	.....	.....	4	7
Lanark:																		
Males	17	15	33	34	19	27	20	24	20	20	25	27	281	.....	.....	.....	3	2
Females	23	21	20	27	22	22	21	17	18	18	35	34	278	.....	.....	.....	3	2
Total	40	36	53	61	41	49	41	41	38	38	60	61	559	6	.....	.....	6	4
Leeds and Grenville:																		
Males	41	33	43	33	44	33	44	41	61	26	37	31	467	.....	.....	.....	5	2
Females	49	31	38	33	31	38	44	43	32	38	22	29	428	.....	.....	.....	2	2
Total	90	64	81	66	75	71	88	84	93	64	59	60	895	9	.....	.....	7	4
Lennox and Addington:																		
Males	12	19	26	24	14	18	19	15	21	24	15	22	229	.....	.....	.....	1	1
Females	22	16	14	16	25	9	17	22	17	12	16	18	204	.....	.....	.....	1	1
Total	34	35	40	40	39	27	36	37	38	36	31	40	433	3	.....	.....	2	2
Lincoln:																		
Males	32	23	22	35	36	13	26	28	27	28	33	34	337	.....	.....	.....	3	4
Females	28	13	25	31	35	27	19	28	34	38	27	26	331	.....	.....	.....	8	1
Total	60	36	47	66	71	40	45	56	61	66	60	60	668	8	.....	.....	11	5
Middlesex:																		
Males	102	95	89	104	91	71	87	80	103	77	80	65	1044	.....	.....	.....	22	4
Females	83	91	97	92	90	85	86	83	79	93	76	83	1038	.....	.....	.....	20	4
Total	185	186	186	196	181	156	173	163	182	170	156	148	2082	18	1	1	42	8

Muskoka and Parry Sound:																		
Males	40	27	41	45	44	36	33	23	10	30	20	23	402	......	......	......	3	1
Females	28	41	42	47	47	29	38	34	45	28	33	21	436	......	......	......	4	1
Total	68	68	83	92	91	65	71	57	85	58	53	47	838	7	......	......	7	2
Norfolk:																		
Males	17	24	30	36	28	33	38	31	34	32	23	27	353	......	......	......	4	1
Females	29	26	27	39	30	22	27	28	27	22	22	25	324	......	......	......	2	1
Total	46	50	57	75	58	55	65	59	61	54	45	52	677	5	......	......	6	2
Northumberland and Durham:																		
Males	67	50	74	44	44	44	51	57	68	66	60	59	684	......	......	......	4	2
Females	47	39	58	62	55	40	39	58	64	51	58	54	625	......	......	......	2	3
Total	114	89	132	106	99	84	90	115	132	117	118	113	1309	7	......	......	6	5
Ontario:																		
Males	53	45	51	58	64	42	56	58	59	63	47	52	648	......	......	......	5	4
Females	50	51	51	45	48	38	47	56	64	45	45	33	573	......	......	......	6	3
Total	103	96	102	103	112	80	103	114	123	108	92	85	1221	10	......	......	11	7
Oxford:																		
Males	33	56	46	48	48	36	62	48	40	50	48	46	561	......	......	......	5	5
Females	54	46	62	47	42	44	51	55	47	40	50	40	578	......	......	......	2	2
Total	87	102	108	95	90	80	113	103	87	90	98	86	1139	12	......	......	7	7
Peel:																		
Males	24	22	16	24	30	19	22	31	26	23	21	17	275	......	......	......	2	2
Females	22	18	30	25	17	16	13	29	24	20	19	21	254	......	......	......	3	2
Total	46	40	46	49	47	35	35	60	50	43	40	38	529	3	......	......	5	4
Perth:																		
Males	51	47	60	54	47	39	35	69	53	56	41	43	595	......	......	......	2	2
Females	38	37	42	44	50	44	39	51	47	55	38	52	537	......	......	......	3	2
Total	89	84	102	98	97	83	74	120	100	111	79	95	1132	7	......	......	5	4
Peterborough:																		
Males	25	32	44	34	29	39	33	30	40	33	27	42	408	......	......	......	3	2
Females	36	31	39	44	30	30	35	34	35	39	39	36	428	......	......	......	3	3
Total	61	63	83	78	59	69	68	64	75	72	66	78	836	7	......	......	6	5

TABLE A.—BIRTHS BY MONTHS, 1883—*Concluded.*

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	No. of Pairs of Twins.	Quadruplets.	Triplets.	Illegitimate.	Still Born.
Prescott and Russell:																		
Males	52	39	52	50	64	41	61	55	50	50	46	48	608	......	......	......	3	3
Females	50	57	72	64	64	42	60	58	65	37	54	35	658	......	......	......	4	2
Total	102	96	124	114	128	83	121	113	115	87	100	83	1266	14	......	......	7	5
Prince Edward:																		
Males	21	14	20	20	13	13	16	15	22	20	12	10	196	......	......	......	1	1
Females	19	14	11	14	22	18	16	10	13	15	18	18	188	......	......	......	1	1
Total	40	28	31	34	35	31	32	25	35	35	30	28	384	5	......	......	2	2
Renfrew:																		
Males	36	39	35	39	31	26	42	34	28	26	21	45	402	......	......	......	5	2
Females	33	38	52	35	40	35	47	30	25	41	26	24	426	......	......	......	3	2
Total	69	77	87	74	71	61	89	64	53	67	47	69	828	5	......	......	8	4
Simcoe:																		
Males	53	65	69	68	47	63	51	68	57	71	72	55	739	......	......	......	8	6
Females	56	50	74	65	52	53	51	59	59	71	45	47	682	......	......	......	3	3
Total	109	115	143	133	99	116	102	127	116	142	117	102	1421	7	......	......	11	9
Stormont, Dundas and Glengarry:																		
Males	58	51	42	60	48	39	33	42	50	61	47	52	583	......	......	......	2	2
Females	44	45	70	43	53	38	35	46	52	43	41	49	559	......	......	......	2	3
Total	102	96	112	103	101	77	68	88	102	104	88	101	1142	15	......	......	4	5
Victoria:																		
Males	31	25	35	30	31	31	33	35	36	24	27	40	378	......	......	......	4	3
Females	29	29	36	37	29	28	27	32	26	27	27	33	360	......	......	......	3	2
Total	60	54	71	67	60	59	60	67	62	51	54	73	738	8	......	......	7	5

Waterloo:																		
Males	66	62	70	54	49	57	45	59	60	52	51	56	681	......	......	......	10	5
Females	61	45	59	43	38	44	41	47	58	50	51	50	587	......	......	......	10	4
Total	127	107	129	97	87	101	86	106	118	102	102	106	1268	10	......	......	20	9
Welland:																		
Males	24	36	44	33	24	27	41	32	36	21	33	29	380	......	......	......	6	3
Females	23	22	40	23	26	25	26	30	45	23	15	25	323	......	......	......	3	2
Total	47	58	84	56	50	52	67	62	81	44	48	54	703	6	......	......	9	5
Wellington:																		
Males	75	67	67	57	65	49	68	70	68	68	64	68	786	......	......	......	7	3
Females	77	53	74	58	68	69	70	69	65	74	55	57	789	......	......	......	7	4
Total	152	120	141	115	133	118	138	139	133	142	119	125	1575	14	......	......	14	7
Wentworth:																		
Males	87	83	87	97	82	69	91	89	96	77	87	74	1019	......	......	......	39	14
Females	67	71	74	76	91	57	81	82	85	80	91	61	916	......	......	......	23	7
Total	154	154	161	173	173	126	172	171	181	157	178	135	1935	23	......	2	62	21
York:																		
Males	177	163	203	175	184	157	155	203	188	191	168	185	2149	......	......	......	68	15
Females	132	158	187	172	166	183	165	184	205	179	182	185	2098	......	......	......	58	12
Total	309	321	390	347	350	340	320	387	393	370	350	370	4247	44	......	1	126	27
Total Males	1860	1821	2031	1919	1787	1665	1814	1890	1952	1872	1718	1786	22115	377	......	......	532	124
Total Females	1698	1622	1982	1804	1770	1628	1720	1779	1869	1734	1639	1621	20866		......	......	457	107
Grand Total	3558	3443	4013	3723	3557	3293	3534	3669	3821	3606	3357	3407	42981	377	1	8	989	231

H. S. CREWE,
Inspector.

MARRIAGES.

TABLE B.—MARRIAGES BY DENOMINATIONS, 1883.

The following Table shews the number of Marriages returned as having been solemnized during the year 1883, the religious denomination of the parties married, and whether by license or banns.

COUNTIES.	Religious Denomination of Bride and Bridegroom.												Total.	No Denominations given.	Grand Total.	How Married.			
	Episcopalian.	Presbyter	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Lutheran.	Evangelical Associa-	Quaker.	Mennonite.	Bible Christian.	Other Denominat'ns.				License.	Bann	Not stated.	Total Marriages.
Algoma and Thunder Bay :																			
Males	14	37	41	11	3	1	1	1	.....	.....	.....	1	110	.....	110	.....	.....	.....	.....
Females	18	37	38	13	2	.....	1	1	.....	.....	.....	.....	110	.....	110	.....	.....	.....	.....
Total	32	74	79	24	5	1	2	2	.....	.....	.....	1	220	.....	220	106	4	.....	110
Brant :																			
Males	27	50	102	10	35	6	1	.....	1	.....	2	6	240	3	243	.....	.....	.....	.....
Females	24	34	104	15	45	13	2	.....	.....	.....	2	2	241	2	243	.....	.....	.....	.....
Total	51	84	206	25	80	19	3	.....	1	.....	4	8	481	5	486	233	7	3	243
Bruce :																			
Males	58	128	115	48	17	3	4	8	.....	2	4	6	393	2	395	.....	.....	.....	.....
Females	49	127	117	48	25	[illegible]	6	8	.....	.....	3	5	392	3	395	.....	.....	.....	.....
Total	107	255	232	96	42	7	10	16	.....	2	7	11	785	5	790	338	52	5	395
Carleton :																			
Males	124	100	63	289	10	3	2	.....	.....	.....	.....	5	596	3	599	.....	.....	.....	.....
Females	115	84	72	302	16	2	2	.....	.....	.....	.....	3	596	3	599	.....	.....	.....	.....
Total	239	184	135	591	26	5	4	.....	.....	.....	.....	8	1192	6	1198	369	223	7	599

Dufferin:																			
Males	22	50	56	......	1	......	1	......	1	......	......	3	134	......	134	......	......	......	......
Females	29	41	60	1	2	......	......	......	......	......	......	1	134	......	134	......	......	......	......
Total	51	91	116	1	3	......	1	......	1	......	......	4	268	......	268	133	1	......	134
Elgin:																			
Males	55	58	143	12	49	2	2	1	......	......	7	3	332	6	338	......	......	......	......
Females	49	54	141	15	59	2	......	......	......	......	6	6	332	6	338	......	......	......	......
Total	104	112	284	27	108	4	2	1	......	......	13	9	664	12	676	325	10	3	338
Essex:																			
Males	44	35	101	141	22	1	3	......	......	......	5	4	359	2	361	......	......	......	......
Females	30	26	122	145	23	1	......	1	......	......	6	5	359	2	361	......	......	......	......
Total	74	61	226	286	45	2	3	1	......	......	11	9	718	4	722	222	138	1	361
Frontenac:																			
Males	63	36	124	48	3	2	......	......	......	......	......	7	283	9	292	......	......	......	......
Females	65	39	120	49	4	5	1	......	......	......	......	4	287	5	292	......	......	......	......
Total	128	75	244	97	7	7	1	......	......	......	......	11	570	14	584	253	38	1	292
Grey:																			
Males	50	124	133	17	13	4	26	8	......	......	4	1	380	2	382	......	......	......	......
Females	45	125	136	19	20	......	21	10	......	......	5	......	381	1	382	......	......	......	......
Total	95	219	269	36	33	4	47	18	......	......	9	1	761	3	764	348	34	......	382
Haldimand:																			
Males	32	23	59	9	21	......	5	4	1	......	......	2	156	8	164	......	......	......	......
Females	23	17	61	10	24	......	4	7	......	1	......	8	158	6	164	......	......	......	......
Total	55	40	123	19	45	......	9	11	1	1	......	10	314	14	328	155	9	......	164
Halton:																			
Males	22	38	62	1	3	4	......	......	......	......	......	3	133	......	133	......	......	......	......
Females	18	37	67	2	5	1	1	......	......	......	......	1	132	1	133	......	......	......	......
Total	40	75	129	3	8	5	1	......	......	......	......	4	265	1	266	133	......	......	133

TABLE B.—MARRIAGES BY DENOMINATIONS, 1883—*Continued.*

COUNTIES.	Religious Denomination of Bride and Bridegroom.												Total.	No Denomination given.	Grand Total.	How Married.			
	Episcopalian.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Lutheran.	Evangelical Association.	Quaker.	Mennonite.	Bible Christian.	Other Denominations.				License.	Banns.	Not stated.	Total Marriages.
Hastings:																			
Males	78	61	232	38	10	3	.....	.....	3	.....	18	3	446	4	450	.....	.....	.....	.....
Females	76	53	251	44	5	1	.....	.....	1	.....	17	.....	448	2	450	.....	.....	.....	.....
Total	154	114	483	82	15	4	.....	.....	4	.....	35	3	894	6	900	427	21	2	450
Huron:																			
Males	59	144	141	8	6	2	6	13	.....	2	23	3	407	6	413	.....	.....	.....	.....
Females	70	134	134	9	4	3	5	12	.....	3	29	7	410	3	413	.....	.....	.....	.....
Total	129	278	275	17	10	5	11	25	.....	5	52	10	817	9	826	393	20	.....	413
Kent:																			
Males	46	77	206	52	33	1	2	.....	.....	.....	.....	6	423	9	432	.....	.....	.....	.....
Females	52	77	209	51	29	1	1	.....	.....	.....	1	4	425	7	432	.....	.....	.....	.....
Total	98	154	415	103	62	2	3	.....	.....	.....	1	10	848	16	864	376	54	2	432
Lambton:																			
Males	62	96	163	4	27	6	1	1	.....	2	1	3	366	1	367	.....	.....	.....	.....
Females	51	84	175	5	33	8	1	1	.....	1	2	4	365	2	367	.....	.....	.....	.....
Total	113	180	338	9	60	14	2	2	.....	3	3	7	731	3	734	363	4	.....	367

Lanark :																			
Males	67	104	50	44	11	6	......	......	......	......	1	......	283	......	283	......	......	......	......
Females	52	115	48	43	13	9	......	......	......	......	1	1	282	1	283	......	......	......	......
Total	119	219	98	87	24	15	......	......	......	......	2	1	565	1	566	253	29	1	283
Leeds and Grenville :																			
Males	112	71	155	53	26	2	1	......	......	......	......	......	420	1	421	......	......	......	......
Females	109	56	184	53	18	1	......	......	......	......	......	......	421	......	421	......	......	......	......
Total	221	127	339	106	44	3	1	......	......	......	......	......	841	1	842	387	33	1	421
Lennox and Addington :																			
Males	32	14	153	33	1	......	1	......	1	......	......	......	235	......	235	......	......	......	......
Females	32	12	159	30	......	......	1	......	1	......	......	......	235	......	235	......	......	......	......
Total	64	26	312	63	1	......	2	......	2	......	......	......	470	......	470	205	30	......	235
Lincoln :																			
Males	50	42	96	27	8	......	5	2	......	2	......	4	236	5	241	......	......	......	......
Females	51	32	103	25	15	1	......	2	......	2	......	6	237	4	241	......	......	......	......
Total	101	74	199	52	23	1	5	4	......	4	......	10	473	9	482	223	18	......	241
Middlesex :																			
Males	144	126	267	63	52	9	3	......	......	......	21	14	699	1	700	......	......	......	......
Females	138	119	270	74	55	12	2	......	......	......	19	10	699	1	700	......	......	......	......
Total	282	245	537	137	107	21	5	......	......	......	40	24	1398	2	1400	661	32	7	700
Muskoka and Parry Sound :																			
Males	34	44	66	17	6	......	5	......	......	......	1	1	174	1	175	......	......	......	......
Females	37	37	77	17	1	1	4	......	......	......	1	......	175	......	175	......	......	......	......
Total	71	81	143	34	7	1	9	......	......	......	2	1	349	1	350	165	10	......	175
Norfolk :																			
Males	27	21	104	1	74	1	3	4	......	1	......	2	238	6	244	......	......	......	......
Females	20	18	104	1	87	......	4	3	1	......	......	2	240	4	244	......	......	......	......
Total	47	39	208	2	161	1	7	7	1	1	......	4	478	10	488	238	6	......	244

TABLE B.—MARRIAGES BY DENOMINATIONS, 1883—*Continued.*

COUNTIES.	Religious Denomination of Bride and Bridegroom.												Total.	No Denominations given.	Grand Total.	How Married.			
	Episcopalian.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Lutheran.	Evangelical Association.	Quaker.	Mennonite.	Bible Christian.	Other Denominations.				License.	Banns.	Not stated.	Total Marriages.
Northumberland and Durham:																			
Males	85	105	243	17	6	7	1	......	......	......	40	4	508	4	512	......	......	......	......
Females	81	92	243	20	14	8	......	......	......	......	49	4	511	1	512	......	......	......	......
Total	166	197	486	37	20	15	1	......	......	......	89	8	1019	5	1024	500	10	2	512
Ontario:																			
Males	51	73	151	17	10	4	......	......	......	2	35	3	346	1	347	......	......	......	......
Females	42	60	154	24	20	3	......	......	......	1	39	2	345	2	347	......	......	......	......
Total	93	133	305	41	30	7	......	......	......	3	74	5	691	3	694	313	31	3	347
Oxford:																			
Males	45	80	153	11	53	3	10	......	1	1	17	7	381	5	386	......	......	......	......
Females	51	68	169	10	55	4	5	2	......	1	11	6	382	4	386	......	......	......	......
Total	96	148	322	21	108	7	15	2	1	2	28	13	763	9	772	379	7	......	386
Peel:																			
Males	41	48	80	9	7	2	1	......	......	1	1	1	191	1	192	......	......	......	......
Females	38	48	87	11	3	2	1	......	......	......	......	1	191	1	192	......	......	......	......
Total	79	96	167	20	10	4	2	......	......	1	1	2	382	2	384	182	7	3	192

Perth:																			
Males	53	119	108	30	15	3	45	9	1	6	13	3	405	3	408	.....	.....	.....	.....
Females	46	121	107	39	11	2	48	10	.....	6	12	3	405	3	408	.....	.....	.....	.....
Total	99	240	215	69	26	5	93	19	1	12	25	6	810	6	816	374	32	2	408
Peterborough:																			
Males	39	59	89	58	8	.....	1	.....	.....	.....	9	.....	263·	1	264	.....	.....	.....	.....
Females	42	47	100	56	6	.....	.....	.....	.....	.....	12	.....	263	1	264	.....	.....	.....	.....
Total	81	106	189	114	14	.....	1	.....	.....	.....	21	.....	526	2	528	207	53	4	264
Prescott and Russell:																			
Males	9	18	8	179	5	.....	.....	.....	.....	.....	.....	.....	219	.....	219	.....	.....	.....	.....
Females	4	21	10	179	5	.....	.....	.....	.....	.....	.....	.....	219	.....	219	.....	.....	.....	.....
Total	13	39	18	358	10	.....	.....	.....	.....	.....	.....	.....	438	.....	438	66	152	1	219
Prince Edward:																			
Males	17	13	97	7	.....	2	.....	.....	1	.....	.....	2	139	1	140	.....	.....	.....	.....
Females	19	5	109	5	.....	.....	.....	.....	.....	.....	1	1	140	.....	140	.....	.....	.....	.....
Total	36	18	206	12	.....	2	.....	.....	1	.....	1	3	279	1	280	135	5	.....	140
Renfrew:																			
Males	44	54	30	114	4	.....	19	7	.....	.....	.....	.....	272	2	274	.....	.....	.....	.....
Females	38	60	34	113	4	.....	18	6	.....	.....	.....	.....	273	1	274	.....	.....	.....	.....
Total	82	114	64	227	8	.....	37	13	.....	.....	.....	.....	545	3	548	152	122	.....	274
Simcoe:																			
Males	126	132	156	38	15	9	.....	.....	.....	3	2	4	485	5	490	.....	.....	.....	.....
Females	116	129	163	44	18	9	.....	.....	2	2	.....	4	487	3	490	.....	.....	.....	.....
Total	242	261	319	82	33	18	.....	.....	2	5	2	8	972	8	980	452	36	2	490
Stormont, Dundas and Glengarry:																			
Males	62	115	99	157	18	7	20	.....	.....	.....	.....	4	482	9	491	.....	.....	.....	.....
Females	62	115	102	166	16	3	22	.....	.....	.....	.....	2	488	3	491	.....	.....	.....	.....
Total	124	230	201	323	34	10	42	.....	.....	.....	.....	6	970	12	982	339	149	3	491

TABLE B.—MARRIAGES BY DENOMINATIONS, 1883—*Concluded.*

COUNTIES.	Religious Denomination of Bride and Bridegroom.															How Married.			
	Episcopalian.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Lutheran.	Evangelical Association.	Quaker.	Mennonite.	Bible Christian.	Other Denominations.	Total.	No Denomination given.	Grand Total.	License.	Banns.	Not stated.	Total Marriages.
Victoria:																			
Males	39	35	85	50	6	1	1	.....	.....	.....	34	2	253	2	255	.....	.....	.....	.....
Females	33	31	90	55	9	3	1	.....	1	.....	28	2	253	2	255	.....	.....	.....	.....
Total	72	66	175	105	15	4	2	.....	1	.....	62	4	506	4	510	223	32	.....	255
Waterloo:																			
Males	25	67	54	45	9	2	90	22	2	39	.....	16	371	16	387	.....	.....	.....	.....
Females	17	72	50	56	9	.....	84	23	.....	42	2	17	372	15	387	.....	.....	.....	.....
Total	42	139	104	101	18	2	174	45	2	81	2	33	743	31	774	271	115	1	387
Welland:																			
Males	51	30	85	8	9	1	13	3	2	5	1	11	219	6	225	.....	.....	.....	.....
Females	58	22	86	9	8	3	14	2	1	7	.....	12	222	3	225	.....	.....	.....	.....
Total	109	52	171	17	17	4	27	5	3	12	1	23	441	9	450	212	13	.....	225
Wellington:																			
Males	71	147	164	48	13	11	4	1	.....	1	4	8	472	3	475	.....	.....	.....	.....
Females	65	152	151	55	14	8	3	.....	.....	2	8	16	474	1	475	.....	.....	.....	.....
Total	136	299	315	103	27	19	7	1	.....	3	12	24	946	4	950	435	40	.....	475

Wentworth:																			
Males	147	104	223	78	28	8	13	1	......	......	4	2	608	8	616	......	......	......	......
Females	148	101	209	98	33	2	6	1	......	......	5	4	607	9	616	......	......	......	......
Total	295	205	432	176	61	10	19	2	......	......	9	6	1215	17	1232	573	43	......	616
York																			
Males	473	243	399	194	42	43	7	......	3	3	26	20	1453	31	1484	......	......	......	......
Females	454	212	429	209	65	33	6	......	3	7	27	16	1461	23	1484	......	......	......	......
Total	927	455	828	403	107	76	13	......	6	10	53	36	2914	54	2968	1387	94	3	1484
Total Males	2600	2921	4859	1986	679	159	297	85	17	70	273	164	14110	167	14277	......	......	......	......
Total Females	2467	2714	5048	2120	775	145	264	89	10	75	286	159	14152	125	14277	......	......	......	......
Grand Total	5067	5635	9907	4106	1454	304	561	174	27	145	559	323	28262	292	28554	12506	1714	57	14277

H. S. CREWE,
Inspector.

TABLE C.

MARRIAGES BY MONTHS.

TABLE C.—MARRIAGES BY MONTHS, 1883.

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	No date given.	Total number of Couples married.
Algoma and Thunder Bay	5	9	12	14	4	13	14	9	6	6	13	5	....	110
Brant	19	13	23	22	21	20	18	14	19	22	26	26	....	243
Bruce	50	38	44	31	21	39	23	14	19	44	40	31	1	395
Carleton	49	29	22	53	49	69	57	51	45	72	60	39	4	599
Dufferin	21	10	16	11	6	2	7	11	12	11	11	16	....	134
Elgin	43	26	32	24	28	15	19	15	27	37	17	55	....	338
Essex	47	23	17	43	26	25	26	28	28	41	34	22	1	361
Frontenac	21	20	26	30	17	15	24	21	23	28	30	34	3	292
Grey	45	28	44	32	33	35	20	10	10	44	34	46	1	382
Haldimand	15	18	16	10	16	5	8	6	13	22	10	25	....	164
Halton	11	14	20	8	7	9	5	3	11	13	13	18	1	133
Hastings	53	33	33	32	25	22	22	27	33	58	42	68	2	450
Huron	54	34	47	29	32	26	29	23	17	34	31	55	2	413
Kent	38	39	30	35	49	32	20	14	30	38	39	53	15	432
Lambton	35	27	35	24	25	21	28	19	25	42	27	58	1	367
Lanark	36	16	17	26	19	28	13	23	30	24	25	25	1	283
Leeds and Grenville	44	31	44	24	16	30	29	23	41	44	39	56	....	421

Lennox and Addington	22	15	18	13	18	19	10	15	25	26	13	40	1	235
Lincoln	28	12	18	19	21	15	13	12	18	31	17	34	3	241
Middlesex	74	54	56	49	72	54	42	34	61	76	53	75	....	700
Muskoka and Parry Sound	8	14	12	12	7	12	17	14	25	19	9	24	2	175
Norfolk	20	24	24	23	20	10	12	9	14	22	36	29	1	244
Northumberland and Durham	56	48	43	31	30	44	29	24	46	44	44	70	3	512
Ontario	52	30	26	21	20	22	21	22	23	36	39	34	1	349
Oxford	41	28	37	37	25	25	20	19	22	34	40	58	....	386
Peel	28	18	26	7	6	4	18	3	12	20	20	30	....	192
Perth	50	42	46	28	22	25	20	15	31	46	32	49	2	408
Peterboro	33	10	27	27	14	12	12	19	14	35	30	30	1	264
Prescott and Russell	20	19	7	16	11	20	25	31	23	25	16	6	....	219
Prince Edward	10	9	12	13	5	9	9	4	18	14	14	22	1	140
Renfrew	22	10	9	34	27	25	34	22	28	28	17	18	....	274
Simcoe	42	35	44	50	35	28	34	24	53	46	45	52	2	490
Stormont, Dundas and Glengarry	62	29	30	52	23	30	35	28	42	70	38	50	2	491
Victoria	33	21	24	12	15	16	12	13	22	27	30	30	....	255
Waterloo	42	31	35	25	25	32	24	18	23	42	43	45	2	387
Welland	27	16	18	16	19	20	17	13	18	28	10	21	2	225
Wellington	70	39	46	26	41	23	19	24	23	60	42	60	2	475
Wentworth	55	28	32	51	43	37	40	42	72	93	52	71	....	616
York	138	104	99	120	121	130	117	105	137	145	132	134	2	1484
Total	1519	44	1167	1130	1014	1018	942	821	1139	1547	1263	1614	59	14277

TABLE D.—MARRIAGES BY AGES, 1883.

COUNTIES.	Under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.	45 and under 50.	50 and under 55.	55 and under 60.	60 and under 65.	65 and under 70.	70 and under 75.	75 and under 80.	Over 80.	Ages not given.	Total.	Bachelors.	Widowers.	Total.	Spinsters.	Widows.	Total.
Algoma and Thunder Bay:																						
Males	....	53	34	12	6	2	1	1	1	....	....	....	....	....	....	110	......	....	......	......	....	......
Females	42	47	13	1	1	3	3	....	....	....	....	....	....	....	....	110	......	....	......	......	....	......
Total	42	100	47	13	7	5	4	1	1	....	....	....	....	....	....	220	101	9	110	104	6	110
Brant:																						
Males	2	107	76	32	6	9	4	1	1	1	4	....	....	....	....	243	......	....	......	......	....	......
Females	49	119	47	13	6	3	3	1	2	....	....	....	....	....	....	243	......	....	......	......	....	......
Total	51	226	123	45	12	12	7	2	3	1	4	....	....	....	....	486	215	28	243	233	10	243
Bruce:																						
Males	8	149	149	42	22	11	8	1	....	1	4	....	....	....	....	395	......	....	......	......	....	......
Females	76	235	62	10	6	2	1	....	2	1	....	....	....	....	....	395	......	....	......	......	....	......
Total	84	384	211	52	28	13	9	1	2	2	4	....	....	....	....	790	357	38	395	385	10	395
Carleton:																						
Males	16	213	198	89	34	17	10	7	4	2	1	....	....	....	8	599	......	....	......	......	....	......
Females	105	285	144	27	14	6	4	4	....	1	....	....	....	....	9	599	......	....	......	......	....	......
Total	121	498	342	116	48	23	14	11	4	3	1	....	....	....	17	1198	527	72	599	576	23	599
Dufferin:																						
Males	....	54	49	17	7	2	2	....	1	....	1	1	....	....	....	134	......	....	......	......	....	......
Females	31	79	14	4	4	....	....	1	....	....	1	....	....	....	....	134	......	....	......	......	....	......
Total	31	133	63	21	11	2	2	1	1	....	2	1	....	....	....	268	120	14	134	127	7	134
Elgin:																						
Males	2	132	103	45	26	11	3	7	3	3	3	....	....	....	....	338	......	....	......	......	....	......
Females	68	171	53	22	11	7	1	2	1	....	1	....	....	....	1	338	......	....	......	......	....	......
Total	70	303	156	67	37	18	4	9	4	3	4	....	....	....	1	676	295	43	338	317	21	338

Essex :																						
Males	6	153	98	47	19	15	10	4	4	3	1	....	1	....	....	361	......	....	......	......	....	......
Females	96	170	48	19	10	6	7	2	1	....	....	2	....	....	....	361	......	....	......	......	....	......
Total	102	323	146	66	29	21	17	6	5	3	1	2	1	....	....	722	299	62	361	323	38	361
Frontenac :																						
Males	3	133	83	24	15	11	5	9	3	3	1	....	....	....	2	292	......	....	......	......	....	......
Females	61	144	48	15	6	7	6	1	....	....	....	....	....	....	4	292	......	....	......	......	....	......
Total	64	277	131	39	21	18	11	10	3	3	1	....	....	....	6	584	250	42	292	268	24	292
Grey :																						
Males	5	142	152	41	16	11	3	2	2	5	2	1	....	....	....	382	......	....	......	......	....	......
Females	70	217	58	15	11	2	3	4	1	....	....	....	....	....	1	382	......	....	......	......	....	......
Total	75	359	210	56	27	13	6	6	3	5	2	1	....	....	1	764	346	36	382	365	17	382
Haldimand :																						
Males	....	57	65	21	8	5	2	2	2	2	....	....	....	....	....	164	......	....	......	......	....	......
Females	37	82	29	10	2	....	2	2	....	....	....	....	....	....	....	164	......	....	......	......	....	......
Total	37	139	94	31	10	5	4	4	2	2	....	....	....	....	....	328	144	20	164	156	8	164
Halton :																						
Males	....	39	47	24	7	8	5	2	1	....	....	....	....	....	....	133	......	....	......	......	....	......
Females	20	63	27	12	4	2	1	2	1	....	....	....	....	....	1	133	......	....	......	......	....	......
Total	20	102	74	36	11	10	6	4	2	....	....	....	....	....	1	266	116	17	133	129	4	133
Hastings :																						
Males	11	187	146	48	30	10	7	2	2	1	1	1	....	....	4	450	......	....	......	......	....	......
Females	132	209	63	22	11	4	5	....	....	....	....	....	....	....	4	450	......	....	......	......	....	......
Total	143	396	209	70	41	14	12	2	2	1	1	1	....	....	8	900	403	47	450	431	19	450
Huron :																						
Males	3	128	158	60	27	11	4	7	4	5	2	2	....	....	2	413	......	....	......	......	....	......
Females	65	216	80	17	18	7	....	2	5	....	....	....	1	....	2	413	......	....	......	......	....	......
Total	68	344	238	77	45	18	4	9	9	5	2	2	1	....	4	826	358	55	413	390	23	413
Kent :																						
Males	5	162	149	53	17	10	3	5	6	3	....	1	....	....	18	432	......	....	......	......	....	......
Females	111	199	62	19	10	5	3	2	....	3	....	....	....	....	18	432	......	....	......	......	....	......
Total	116	361	211	72	27	15	6	7	6	6	....	1	....	....	36	864	387	45	432	402	30	432

TABLE D.—MARRIAGES BY AGES, 1883—*Continued*

COUNTIES.	Under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.	45 and under 50.	50 and under 55.	55 and under 60.	60 and under 65.	65 and under 70.	70 and under 75.	75 and under 80.	Over 80.	Ages not given.	Total.	Bachelors.	Widowers.	Total.	Spinsters.	Widows.	Total.
Lambton :																						
Males	4	134	136	40	21	12	6	4	6	1	3	....	....	....	....	367	......	....	......	......	....	......
Females	80	175	63	16	14	10	3	2	2	....	....	....	....	....	2	367	......	....	......	......	....	......
Total	84	309	199	56	35	22	9	6	8	1	3	....	....	....	2	734	327	40	367	349	18	367
Lanark :																						
Males	2	88	103	53	19	11	5	....	1	....	1	....	....	....	....	283	......	....	......	......	....	......
Females	42	141	74	17	5	2	1	....	1	....	....	....	....	....	....	283	......	....	......	......	....	......
Total	44	229	177	70	24	13	6	....	2	....	1	....	....	....	....	566	243	40	283	274	9	283
Leeds and Grenville :																						
Males	7	175	134	45	18	11	8	3	6	3	3	1	1	....	6	421	......	....	......	......	....	......
Females	70	203	90	23	11	12	5	....	1	....	....	....	....	....	6	421	......	....	......	......	....	......
Total	77	378	224	68	29	23	13	3	7	3	3	1	1	....	12	842	371	50	421	394	27	421
Lennox and Addington :																						
Males	4	92	57	36	17	10	2	2	3	4	5	1	1	...	1	235	......	....	......	......	....	......
Females	56	97	38	23	7	5	1	2	4	2	....	....	....	....	....	235	......	....	......	......	....	......
Total	60	189	95	59	24	15	3	4	7	6	5	1	1	....	1	470	201	34	235	216	19	235
Lincoln :																						
Males	5	93	80	31	9	9	5	1	2	4	2	....	....	....	....	241	......	....	......	......	....	......
Females	59	102	42	19	10	4	2	2	....	1	....	....	....	....	....	241	......	....	......	......	....	......
Total	64	195	122	50	19	13	7	3	2	5	2	....	....	....	....	482	208	33	241	225	16	241
Middlesex :																						
Males	7	234	253	107	47	18	6	10	7	5	3	3	....	....	....	700	......	....	......	......	....	......
Females	105	364	144	46	17	8	6	3	5	1	....	1	....	....	....	700	......	....	......	......	....	......
Total	112	598	397	153	64	26	12	13	12	6	3	4	....	....	....	1400	641	59	700	663	37	700

Muskoka and Parry Sound:																						
Males	1	82	53	24	8	2	2	1	1	....	....	....	....	....	1	175	......	....	......	......	....	......
Females	71	76	15	6	5	1	1	....	....	....	....	....	....	....	....	175	......	....	......	......	....	......
Total	72	158	68	30	13	3	3	1	1	....	....	....	....	....	1	350	156	19	175	166	9	175
Norfolk:																						
Males	8	98	78	20	13	4	3	7	4	4	3	....	2	....	....	244	......	....	......	......	....	......
Females	67	114	28	12	4	7	3	....	3	6	....	....	....	....	....	244	......	....	......	......	....	......
Total	75	212	106	32	17	11	6	7	7	10	3	....	2	....	....	488	205	39	244	222	22	244
Northumberland and Durham:																						
Males	4	188	180	70	30	15	8	4	2	4	....	3	1	....	3	512	......	....	......	......	....	......
Females	107	244	103	25	13	6	2	4	3	1	....	1	....	....	3	512	......	....	......	......	....	......
Total	111	432	283	95	43	21	10	8	5	5	....	4	1	....	6	1024	459	53	512	486	26	512
Ontario:																						
Males	4	128	123	43	14	13	3	7	6	2	2	1	....	....	1	347	......	....	......	......	....	......
Females	61	183	65	19	8	2	2	1	4	1	1	....	....	....	....	347	......	....	......	......	....	......
Total	65	311	188	62	22	15	5	8	10	3	3	1	....	....	1	694	304	43	347	331	16	347
Oxford:																						
Males	3	155	125	54	18	12	8	2	2	2	2	2	....	....	1	386	......	....	......	......	....	......
Females	74	188	86	20	3	7	2	....	4	....	1	....	....	....	1	386	......	....	......	......	....	......
Total	77	343	211	74	21	19	10	2	6	2	3	2	....	....	2	772	343	43	386	370	16	386
Peel:																						
Males	1	67	68	33	12	2	2	2	1	2	....	1	....	....	1	192	......	....	......	......	....	......
Females	30	95	49	9	2	2	2	1	1	1	....	....	....	....	....	192	......	....	......	......	....	......
Total	31	162	117	42	14	4	4	3	2	3	....	1	....	....	1	384	183	9	192	187	5	192
Perth:																						
Males	3	126	167	56	23	9	12	2	3	2	....	4	....	....	1	408	......	....	......	......	....	......
Females	57	238	78	16	4	5	2	3	1	....	2	....	....	....	2	408	......	....	......	......	....	......
Total	60	364	245	72	27	14	14	5	4	2	2	4	....	....	3	816	369	39	408	389	19	408
Peterborough:																						
Males	3	89	103	38	9	8	5	7	....	....	1	....	....	....	1	264	......	....	......	......	....	......
Females	53	130	51	16	3	8	2	....	....	....	....	....	....	....	1	264	......	....	......	......	....	......
Total	56	219	154	54	12	16	7	7	....	....	1	....	....	....	2	528	233	31	264	251	13	264

TABLE D.—MARRIAGES BY AGES, 1883—*Concluded.*

Counties.	Under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.	45 and under 50.	50 and under 55.	55 and under 60.	60 and under 65.	65 and under 70.	70 and under 75.	75 and under 80.	Over 80.	Ages not given.	Total.	Bachelors.	Widowers.	Total.	Spinsters.	Widows.	Total.
Prescott and Russell:																						
Males	5	108	59	27	6	8	1	4	....	....	1	....	....	....	....	219	......	....	......	......	....	......
Females	75	97	29	12	3	2	....	....	....	....	....	....	....	....	1	219	......	....	......	......	....	......
Total	80	205	88	39	9	10	1	4	....	....	1	....	....	....	1	438	198	21	219	211	8	219
Prince Edward:																						
Males	1	64	46	13	8	2	2	2	1	....	....	1	....	....	....	140	......	....	......	......	....	......
Females	45	69	12	10	2	....	1	1	....	....	....	....	....	....	....	140	......	....	......	......	....	......
Total	46	133	58	23	10	2	3	3	1	....	....	1	....	....	....	280	123	17	140	131	9	140
Renfrew:																						
Males	3	85	110	43	12	11	5	1	1	1	1	....	....	....	1	274	......	....	......	......	....	......
Females	53	143	51	16	5	4	1	....	....	....	1	....	....	....	....	274	......	....	......	......	....	......
Total	56	228	161	59	17	15	6	1	1	1	2	....	....	....	1	548	242	32	274	260	14	274
Simcoe:																						
Males	8	161	191	68	28	12	4	6	3	1	2	1	....	....	5	490	......	....	......	......	....	......
Females	121	249	64	27	14	6	....	2	2	....	....	....	....	....	5	490	......	....	......	......	....	......
Total	129	410	255	95	42	18	4	8	5	1	2	1	....	....	10	980	431	59	490	469	21	490
Stormont, Dundas and Glengarry:																						
Males	10	164	173	64	33	20	12	5	1	3	1	2	....	....	3	491	......	....	......	......	....	......
Females	83	238	104	35	12	7	2	1	1	....	....	....	....	....	8	491	......	....	......	......	....	......
Total	93	402	277	99	45	27	14	6	2	3	1	2	....	....	11	982	431	60	491	474	17	491
Victoria:																						
Males	3	82	106	37	5	9	6	5	....	1	....	....	....	....	1	255	......	....	......	......	....	......
Females	41	122	70	8	7	5	1	1	....	....	....	....	....	....	....	255	......	....	......	......	....	......
Total	44	204	176	45	12	14	7	6	....	1	....	....	....	....	1	510	226	29	255	245	10	255

Waterloo:																						
Males	2	175	133	38	10	10	6	6	5	....	2	....	....	....	....	387	......	....	......	......	....	......
Females	67	214	67	18	9	5	2	2	3	....	....	....	....	....	....	387	......	....	......	......	....	......
Total	69	389	200	56	19	15	8	8	8	....	2	....	....	....	....	774	347	40	387	370	17	387
Welland:																						
Males	3	79	68	35	13	13	4	4	1	3	....	1	1	....	....	225	......	....	......	......	....	......
Females	47	110	33	14	9	6	4	....	....	....	1	1	....	....	....	225	......	....	......	......	....	......
Total	50	189	101	49	22	19	8	4	1	3	1	2	1	....	....	450	192	33	225	209	16	225
Wellington:																						
Males	....	165	191	63	15	12	10	6	5	2	5	1	....	....	....	475	......	....	......	......	....	......
Females	78	256	75	34	11	8	5	2	3	1	....	....	....	....	2	475	......	....	......	......	....	......
Total	78	421	266	97	26	20	15	8	8	3	5	1	....	....	2	950	428	47	475	453	22	475
Wentworth:																						
Males	11	231	182	89	38	22	14	14	6	5	1	1	....	....	2	616	......	....	......	......	....	......
Females	99	307	136	27	16	13	12	2	1	1	....	....	....	....	2	616	......	....	......	......	....	......
Total	110	538	318	116	54	35	26	16	7	6	1	1	....	....	4	1232	540	76	616	579	37	616
York:																						
Males	12	569	518	187	68	41	34	22	15	9	3	2	2	....	2	1484	......	....	......	......	....	......
Females	237	777	284	97	29	23	16	6	8	2	....	....	....	....	5	1484	......	....	......	......	....	......
Total	249	1346	802	284	97	64	50	28	23	11	3	2	2	....	7	2968	1320	164	1484	1403	81	1484
Total Males	175	5341	4944	1869	734	429	240	177	116	87	61	31	9	....	64	14277	......	....	......	......	....	......
Total Females	2841	7168	2599	771	337	212	117	58	60	22	8	5	1	....	78	14277	......	....	......	......	....	......
Grand Total	3016	12509	7543	2640	1071	641	357	235	176	109	69	36	10	....	142	28554	12639	1638	14277	13533	744	14277

H. S. CREWE,
Inspector.

DEATHS.

TABLE E.—

Distinguishing by Months, by Ages, by Sex and by Diseases, the Registered Number

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
CLASS I. ZYMOTIC DISEASES, *Zymotici.*													
ORDER 1. MIASMATIC DISEASES, *Miasmatici.*													
Anthrax (Carbuncle) ....M	1	....	1	....	1	....	1	....	....	....	....	....	4
" " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	1	....	1	....	1	....	....	....	....	....	4
Cholera Infantum ....M	2	....	1	1	4	3	50	62	33	7	....	3	166
" " ....F	....	2	4	5	1	5	47	44	29	5	2	2	146
Total	2	2	5	6	5	8	97	106	62	12	2	5	312
Cholera Morbus ....M	1	....	....	....	....	2	6	6	4	3	....	....	22
" " ....F	....	....	....	1	....	1	5	2	3	....	5	1	18
Total	1	....	....	1	....	3	11	8	7	3	5	1	40
Cynanche Trachealis (Membranous Croup).M	10	15	17	13	14	9	8	8	10	14	8	14	140
" " " " F	24	6	11	20	11	7	5	9	7	8	9	10	127
Total	34	21	28	33	25	16	13	17	17	22	17	24	367
Diarrhœa Acuta (Acute Diarrhœa) ... ...M	7	10	6	6	5	10	56	69	61	13	10	8	261
" " " " ......F	4	1	7	12	2	8	34	68	46	14	10	4	210
Total	11	11	13	18	7	18	90	137	107	27	20	12	471
Diarrhœa Chronica (Chronic Diarrhœa)...M	2	....	1	....	....	3	1	2	....	....	....	1	10
" " " " ...F	1	....	....	....	1	....	1	1	3	....	2	....	9
Total	3	....	1	....	1	3	2	3	3	....	2	1	19
Dysenteria Acuta (Acute Dysentery).....M	1	1	....	3	1	1	7	23	20	2	....	....	59
" " " " .... .F	....	3	1	....	....	1	4	11	17	4	1	2	44
Total	1	4	1	3	1	2	11	34	37	6	1	2	103
Diphtheria ....M	49	32	41	35	22	31	22	22	26	21	36	31	368
" ....F	47	22	35	42	25	21	24	10	28	17	25	45	341
Total	96	54	76	77	47	52	46	82	54	38	61	76	709
Erysipelas ....M	9	11	7	13	2	8	5	7	9	4	4	3	82
" ....F	3	7	10	7	7	2	1	....	....	4	4	....	45
Total	12	18	17	20	9	10	6	7	9	8	8	3	127

DEATHS.

of Deaths from various specified Causes (arranged in Classes) during the year 1883.

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	....	....	....	....	1	....	3	....	....	....	4
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	....	3	....	....	....	4
Males	136	28	1	1	....	....	....	....	....	....	....	....	....	....	166
Females	116	25	1	1	....	....	....	....	....	....	....	....	....	3	146
Total	252	53	2	2	....	....	....	....	....	....	....	....	....	3	312
Males	2	4	....	....	....	2	2	2	3	4	3	....	....	....	22
Females	3	2	2	1	1	2	1	1	3	....	1	1	....	....	18
Total	5	6	2	1	1	4	3	3	6	4	4	1	....	....	40
Males	37	77	22	2	....	....	....	....	....	....	....	....	....	2	140
Females	28	62	26	8	....	1	....	....	....	....	....	....	....	2	127
Total	65	139	48	10	....	1	....	....	....	....	....	....	....	4	367
Males	159	55	2	....	7	3	2	2	4	8	9	4	1	5	261
Females	140	36	....	1	1	2	3	4	4	4	7	5	....	3	210
Total	299	91	2	1	8	5	5	6	8	12	16	9	1	8	471
Males	....	1	....	....	....	1	....	....	3	3	2	....	....	....	10
Females	1	....	....	....	....	....	....	4	1	1	2	....	....	....	9
Total	1	1	....	....	....	1	....	4	4	4	4	....	....	....	19
Males	25	18	....	2	....	....	3	3	3	2	....	1	1	1	59
Females	15	6	2	....	2	....	2	1	1	3	3	3	....	6	44
Total	40	24	2	2	2	....	5	4	4	5	3	4	1	7	103
Males	45	151	100	47	14	2	2	....	1	....	....	....	....	6	368
Females	20	125	123	39	14	5	4	1	....	1	1	....	....	8	341
Total	65	276	223	86	28	7	6	1	1	1	1	....	....	14	709
Males	24	4	1	2	....	3	3	7	1	13	18	1	2	3	82
Females	17	3	....	2	....	6	6	3	4	2	1	1	....	....	45
Total	41	7	1	4	....	9	9	10	5	15	19	2	2	3	127

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Entero-Colitis ....M	....	....	....	1	....	....	....	1	....	....	....	....	2
" ....F	....	....	....	....	....	....	....	....	..	....	....	....	....
Total	....	....	....	1	....	....	....	1	....	....	....	....	2
Febris Biliosa (Bilious Fever) ....M	1	1	....	....	1	1	....	....	....	....	2	....	6
" " ....F	2	....	2	1	...	1	2	....	1	1	1	....	11
Total	3	1	2	1	1	2	2	....	1	1	3	....	17
Febris Cerebro-Spinalis (Spinal Fever) ....M	9	6	4	13	8	5	5	5	8	3	2	1	69
" " " ....F	8	4	6	5	12	9	2	4	3	4	6	1	64
Total	17	10	10	18	20	14	7	9	11	7	8	2	133
Febris Congestiva (Congestive Fever) ....M	1	....	....	....	....	.. .	2	....	1	....	....	....	4
" " " " ....F	....	1	1	1	....	1	....	....	....	1	1	....	6
Total	1	1	1	1	....	1	2	....	1	1	1	....	10
Febris Intermittens (Intermittent Fever). M	1	1	....	1	1	....	....	1	....	1	....	1	7
" " " .F	....	....	1	2	3	3	....	....	2	....	....	....	11
Total	1	1	1	3	4	3	....	1	2	1	....	1	18
Febris Remittens (Remittent Fever) ....M	....	1	1	2	1	3	....	....	2	....	....	....	10
" " " " ....F	1	2	1	2	2	2	1	2	3	2	....	....	18
Total	1	3	2	4	3	5	1	2	5	2	....	....	28
Febris Typhoides (Typhoid Fever) ....M	19	14	14	18	11	11	20	28	32	35	24	23	249
" " " " ....F	15	15	16	15	18	11	16	26	20	35	13	20	220
Total	34	29	30	33	29	22	36	54	52	70	37	43	469
Febris Typhus (Typhus Fever) ....M	1	1	1	....	....	....	....	1	....	....	....	1	5
" " " " ....F	....	....	....	....	....	....	....	1	. .	....	....	....	1
Total	1	1	1	....	....	....	....	2	....	....	....	1	6
Influenza ....M	7	2	7	5	2	2	2	2	1	....	1	1	32
"	3	2	10	3	2	....	....	3	....	....	2	2	27
Total	10	4	17	8	4	2	2	5	1	....	3	3	59
Morbilli (Measles) ....M	7	7	14	22	13	9	7	4	5	1	....	....	89
" " ....F	4	1	14	20	17	11	8	3	....	4	4	2	88
Total	11	8	28	42	30	20	15	7	5	5	4	2	177

DEATHS—*Continued.*

SEX.	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
	AGES.														
Males	2	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	2	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Males	....	3	....	....	....	1	....	1	1	....	....	....	....	....	6
Females	....	1	....	1	1	1	2	....	1	2	2	....	....	....	11
Total	....	4	....	1	1	2	2	1	2	2	2	....	....	....	17
Males	20	21	5	7	1	7	1	1	1	1	....	....	....	4	69
Females	12	16	14	8	4	4	2	2	....	1	....	....	....	1	64
Total	32	37	19	15	5	11	3	3	1	2	....	....	....	5	133
Males	....	1	....	....	1	....	....	....	....	....	....	1	....	1	4
Females	....	....	1	....	....	....	3	1	....	....	....	1	....	....	6
Total	....	1	1	....	1	....	3	1	....	....	....	2	....	1	10
Males	1	3	....	1	....	....	....	....	1	....	....	1	....	....	7
Females	2	3	1	....	1	1	1	....	....	1	....	1	....	....	11
Total	3	6	1	1	1	1	1	....	1	1	....	2	....	....	18
Males	....	2	1	1	....	....	1	5	....	....	....	....	....	....	10
Females	....	6	1	2	....	2	2	2	....	2	1	....	....	....	18
Total	....	8	2	3	....	2	3	7	....	2	1	....	....	....	28
Males	4	14	14	22	38	69	30	13	15	8	6	....	....	16	249
Females	11	22	11	14	33	59	31	13	9	13	2	....	....	2	220
Total	15	36	25	36	71	128	61	26	24	21	8	....	....	18	469
Males	....	....	....	....	2	1	1	....	....	1	....	....	....	....	5
Females	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Total	....	....	....	....	2	2	1	....	....	1	....	....	....	....	6
Males	17	6	....	1	....	....	....	1	....	2	2	2	....	1	32
Females	10	1	1	....	2	3	3	....	1	3	...	3	....	....	27
Total	27	7	1	1	2	3	3	1	1	5	2	5	....	1	59
Males	29	39	7	5	4	1	2	....	1	....	....	1	....	....	89
Females	19	42	3	7	3	4	3	3	2	....	....	....	....	2	88
Total	48	81	10	12	7		5	3	3	...	....	1	....	2	177

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Parotitis (Mumps) ....M	....	2	3	2	3	....	....	....	....	....	1	....	11
" " ....F	....	....	1	....	3	....	....	....	....	....	....	....	4
Total	....	2	4	2	6	....	....	....	....	....	1	....	15
Pertussis (Whooping Cough) ....M	5	7	8	5	5	3	4	5	3	3	5	3	56
" " " ....F	7	6	10	7	7	3	3	7	9	3	2	3	67
Total	12	13	18	12	12	6	7	12	12	6	7	6	123
Pyæmia ....M	2	2	6	5	1	5	4	5	4	2	3	6	45
" ....F	10	4	6	4	4	6	2	7	4	4	4	3	58
Total	12	6	12	9	5	11	6	12	8	6	7	9	103
Scarlatina (Scarlet Fever)...............M	21	16	38	16	14	18	16	7	5	10	20	24	205
" " " ....F	24	19	20	27	8	22	8	6	12	6	21	27	200
Total	45	35	58	43	22	40	24	13	17	16	41	51	405
Tonsilitis (Quinsy).....................M	....	....	2	1	....	....	....	....	....	....	....	....	3
" " ....F	....	....	2	....	....	....	....	3	....	....	....	1	6
Total	....	....	4	1	....	....	....	3	...	....	....	1	9
Variola (Small-Pox) ....M	2	1	....	....	....	....	....	....	....	....	....	....	3
" " ....F	....	....	1	....	....	....	....	....	....	....	....	....	1
Total	2	1	1	....	....	....	....	....	....	....	....	....	4
ORDER 2. ENTHETIC DISEASES. *Enthetici.*													
Syphilis ....M	....	1	1	....	....	....	....	....	....	1	1	1	5
" ....F	1	....	....	....	1	....	....	1	1	....	....	1	5
Total	1	1	1	....	1	....	....	1	1	1	1	2	10
ORDER 3. DIETIC DISEASES. *Dietici.*													
Alcoholism..........................M	1	2	....	....	....	1	....	1	2	1	1	....	9
" ....F	1	1	....	....	....	....	....	1	....	1	....	....	4
Total	2	3	....	....	....	1	....	2	2	2	1	....	13

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	4	2	2	....	....	2	....	....	....	1	....	....	....	....	11
Females	....	2	....	1	....	1	....	....	....	....	....	....	....	....	4
Tota	4	4	2	1	....	3	....	....	....	1	....	....	....	....	15
Males	45	8	1	....	....	....	....	....	....	....	....	....	....	2	56
Females	49	15	2	1	....	....	....	....	....	....	....	....	....	....	67
Total	94	23	3	1	....	....	....	....	....	....	....	....	....	2	123
Males	3	3	3	1	3	3	5	4	3	3	7	2	....	5	45
Females	6	2	....	....	3	18	14	8	1	5	....	1	....	....	58
Total	9	5	3	1	6	21	19	12	4	8	7	3	....	5	103
Males	20	100	62	12	3	3	1	....	....	....	....	....	....	4	205
Females	25	106	42	10	2	10	2	....	....	....	....	....	....	3	200
Total	45	206	104	22	5	13	3	....	....	....	....	....	....	7	405
Males	1	....	1	....	....	....	....	1	....	....	....	....	....	....	3
Females	....	....	2	2	....	....	....	....	....	1	1	....	....	....	6
Total	1	....	3	2	....	....	....	1	....	1	1	....	....	....	9
Males	....	....	....	....	....	1	....	1	....	....	....	....	....	1	3
Females	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Total	....	....	....	....	....	1	1	1	....	....	....	....	....	1	4
Males	3	....	....	....	....	1	....	....	1	....	....	....	....	....	5
Females	2	....	....	....	....	1	....	1	....	....	....	....	....	1	5
Total	5	....	....	....	....	2	....	1	1	....	....	....	....	1	10
Males	....	....	....	....	....	....	2	5	....	....	....	....	....	2	9
Females	....	....	....	....	....	....	2	1	....	1	....	....	....	....	4
Total	....	....	....	....	....	....	4	6	....	1	....	....	....	2	13

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Bronchocele .... M	1	....	....	....	....	....	....	....	....	....	....	....	1
" .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	....	....	....	....	....	....	....	....	....	....	1
Delirium alcoholicum (Delirium Tremens) M	....	1	....	....	1	....	....	....	1	2	2	2	9
" " " " F	....	....	1	....	....	....	....	....	....	2	....	....	3
Total	....	1	1	....	1	....	....	....	1	4	2	2	12
Ebriositas (Drunkenness) .... M	....	2	2	3	....	1	3	1	1	....	5	2	20
" " .... F	1	1	....	....	....	....	....	2	....	....	....	....	4
Total	1	3	2	3	....	1	3	3	1	....	5	2	24
Purpura .... M	....	....	....	....	....	....	....	....	....	....	....	....	....
" .... F	....	....	....	1	....	2	....	....	1	....	....	....	4
Total	....	....	....	1	....	2	....	....	1	....	....	....	4
Rachitis (Rickets) .... M	....	....	....	....	....	....	1	1	....	....	....	....	2
" " .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	..	....	....	....	....	....	1	1	....	....	....	....	2
ORDER 4. PARACITIC DISEASES. *Paracitici.*													
Apthæ (Thrush) .... M	....	2	1	1	3	....	3	1	1	1	1	1	15
" " .... F	1	....	1	1	1	2	1	....	1	1	....	....	9
Total	1	2	2	2	4	2	4	1	2	2	1	1	24
Tænia solum (Tape Worm) .... M	....	....	....	....	....	....	....	1	....	....	....	....	1
" " .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	1	....	....	....	....	1
Vermes (Worms) .... M	2	....	1	....	1	1	1	1	....	1	....	1	9
" " .... F	....	1	3	....	....	....	2	1	....	....	....	....	7
Total	2	1	4	....	1	1	3	2	....	1	....	1	16
Total Zymotic Diseases .... M	162	138	177	166	114	127	224	264	229	125	126	127	1979
" " .... F	157	98	164	176	125	118	166	212	190	116	112	124	1758
Total	319	236	341	342	239	245	390	476	419	241	238	251	3737

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Males	....	....	....	....	....	3	4	1	....	....	....	....	....	1	9
Females	....	....	....	....	....	....	2	....	1	....	....	....	....	....	3
Total	....	....	....	....	....	3	6	1	1	....	....	....	....	1	12
Males	....	....	....	....	....	1	3	4	7	3	....	....	....	2	20
Females	....	....	....	....	....	....	2	1	1	....	....	....	....	....	4
Total	....	....	....	....	....	1	5	5	8	3	....	....	....	2	24
Males	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Females	1	....	1	2	....	....	....	....	....	....	....	....	....	....	4
Total	1	....	1	2	....	....	....	....	....	....	....	....	....	....	4
Males	....	1	....	....	1	....	....	....	....	....	....	....	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	1	....	....	1	....	....	....	....	....	....	....	....	....	2
Males	12	3	....	....	....	....	....	....	....	....	....	....	....	....	15
Females	8	....	....	....	....	....	1	....	....	....	....	....	....	....	9
Total	20	3	....	....	....	....	1	....	....	....	....	....	....	....	24
Males	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Males	2	6	1	....	....	....	....	....	....	....	....	....	....	....	9
Females	....	6	1	....	....	....	....	....	....	....	....	....	....	....	7
Total	2	12	2	....	....	....	....	....	....	....	....	....	....	....	16
Males	591	550	223	104	74	105	62	51	47	49	50	13	4	56	1979
Females	485	481	234	100	67	121	87	46	29	40	21	16	....	31	1758
Total	1076	1031	457	204	141	226	149	97	76	89	71	29	4	87	3737

TABLE E.—

CAUSE OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
CLASS II. CONSTITUTIONAL DISEASES. *Cachectici.*													
(ORDER 1. DIATHETIC DISEASES. *Diathctici.*													
Anæmia ....M	70	81	73	88	66	58	84	97	83	59	63	60	882
" ....F	52	57	82	77	62	48	61	77	70	55	40	37	718
Total	122	138	155	165	128	106	145	174	153	114	103	97	1600
Anasarca (General Dropsy) ....M	16	15	11	16	21	15	10	9	18	13	15	13	172
" " ....F	17	15	23	14	20	14	15	17	18	15	18	16	202
Total	33	30	34	30	41	29	25	26	36	28	33	29	374
Arthritis (Articular Rheumatism) ....M	....	....	....	....	....	....	....	....	....	....	....	....	....
" " ....F	....	....	....	....	....	....	....	....	....	....	....	1	1
Total	....	....	....	....	....	....	....	....	....	....	....	1	1
Asthma (Spasmodic Asthma) ....M	3	3	6	6	2	3	7	3	3	4	1	3	44
" " ....F	3	1	2	7	....	1	2	2	2	4	....	2	26
Total	6	4	8	13	2	4	9	5	5	8	1	5	70
Carcinoma Cancer) ....M	14	18	16	13	15	13	21	20	15	17	20	11	193
" " ....F	13	20	18	17	13	18	20	16	16	23	15	21	210
Total	27	38	34	30	28	31	41	36	31	40	35	32	403
Leucocythæmia ....M	1	....	....	....	....	....	....	....	....	....	....	....	1
" ....F	....	....	....	....	1	1	....	1	1	....	....	1	5
Total	1	....	....	....	1	1	....	1	1	....	....	1	6
Mortificacio (Mortification) ....M	4	3	1	1	1	....	....	....	3	1	1	2	17
" " ....F	....	1	....	....	....	1	....	....	2	....	1	1	6
Total	4	4	1	1	1	1	....	....	5	1	2	3	23
Noma (Canker) ....M	....	1	....	....	2	....	3	....	....	....	....	....	6
" " ....F	....	1	1	....	....	....	2	1	....	1	....	....	6
Total	....	2	1	....	2	....	5	1	....	1	....	....	12
Podagra Rheumatica (Rheumatic Gout) ..M	....	....	....	....	....	....	....	2	....	....	....	....	2
" " ..F	....	....	...	....	....	....	1	1	....	....	....	....	2
Total	....	....	....	....	....	....	1	3	....	....	....	....	4

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	745	68	6	3	1	7	5	8	11	22	....	3	....	3	882
Females	552	62	3	5	5	9	11	9	14	33	6	3	....	6	718
Total	1297	130	9	8	6	16	16	17	25	55	6	6	....	9	1600
Males	4	8	6	6	3	4	6	14	14	33	46	20	1	7	172
Females	4	8	5	9	2	12	16	19	30	37	38	18	1	3	202
Total	8	16	11	15	5	16	22	33	44	70	84	38	2	10	374
Males	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Females	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1
Total	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1
Males	1	....	....	1	....	....	1	4	8	10	14	4	....	1	44
Females	....	....	....	....	....	....	1	2	4	7	7	4	....	1	26
Total	1	....	....	1	....	....	2	6	12	17	21	8	....	2	70
Males	....	2	....	....	1	5	3	25	37	52	39	16	1	12	193
Females	1	1	2	....	4	8	23	32	50	48	30	4	1	6	210
Total	1	3	2	....	5	13	26	57	87	100	69	20	2	18	403
Males	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1
Females	....	....	....	....	1	2	1	1	....	....	....	....	....	....	5
Total	....	1	....	....	1	2	1	1	....	....	....	....	....	....	6
Males	1	1	1	....	....	2	3	4	3	....	2	....	....	....	17
Females	1	....	....	....	....	....	....	3	....	....	....	2	....	....	6
Total	2	1	1	....	....	2	3	7	3	....	2	2	....	....	23
Males	5	1	....	....	....	....	....	....	....	....	....	....	....	....	6
Females	5	....	....	....	....	1	....	....	....	....	....	....	....	....	6
Total	10	1	....	....	....	1	....	....	....	....	....	....	....	....	12
Males	....	....	....	....	....	....	....	....	1	1	....	....	....	....	2
Females	....	....	....	....	....	....	1	1	....	....	....	....	....	....	2
Total	....	....	....	....	....	....	1	1	1	1	....	....	....	....	4

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	Jan	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Rheumatismus (Rheumatism) ....M	9	8	4	11	9	5	9	4	6	3	6	5	79
" " ....F	2	6	9	7	12	3	10	7	4	5	3	5	73
Total	11	14	13	18	21	8	19	11	10	8	9	10	152
ORDER 2. TUBERCULAR DISEASE. *Phthisici.*													
Hydrocephalus ....M	3	7	5	7	4	13	15	12	7	6	19	6	104
" ....F	3	9	5	9	9	6	10	7	5	8	7	5	83
Total	6	16	10	16	13	19	25	19	12	14	26	11	187
Meningitis Tuberculosis (Tubercular Meningitis) ....M	3	4	10	1	5	3	4	2	1	3	8	2	46
" " F	3	7	1	2	2	1	3	5	4	2	3	3	36
Total	6	11	11	3	7	4	7	7	5	5	11	5	82
Morbus Coxarius (Hip Disease) ....M	....	1	1	....	1	....	1	1	....	1	....	....	6
" " ....F	....	1	....	....	....	....	....	....	1	1	1	2	6
Total	....	2	1	....	1	....	1	1	1	2	1	2	12
Phthisis Pulmonalis (Consumption) ......M	95	82	103	116	108	92	77	82	90	95	82	99	1121
" " . ....F	119	98	152	147	120	125	98	105	100	116	100	99	1379
Total	214	180	255	263	228	217	175	187	190	211	182	198	2500
Scrofula ....M	2	4	....	6	3	4	5	1	1	1	4	....	31
" ....F	1	1	5	5	3	4	6	2	....	2	2	....	31
Total	3	5	5	11	6	8	11	3	1	3	6	....	62
Tabes Mesenterica ....M	1	2	1	....	1	....	1	1	4	....	....	....	11
" ....F	....	1	....	1	3	1	1	2	2	....	1	....	12
Total	1	3	1	1	4	1	2	3	6	....	1	....	23
Total Constitutional Diseases ....M	221	229	231	265	238	206	237	234	231	203	219	201	2715
" " ....F	213	218	298	286	245	223	229	243	225	232	191	193	2796
Total	434	447	529	551	483	429	466	477	456	435	410	394	5511
CLASS III. LOCAL DISEASES. *Monorganici.*													
ORDER 1. DISEASES OF THE NERVOUS SYSTEM. *Cephalici.*													
Apoplexia (Apoplexy) ....M	21	24	19	14	30	18	14	20	19	17	19	15	230
" " ....F	15	7	15	18	16	18	15	11	13	10	17	16	171
Total	36	31	34	32	46	36	29	31	32	27	36	31	401

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	1	8	8	4	7	9	8	10	7	9	3	....	5	79
Females	1	1	5	7	4	7	4	7	9	11	11	1	....	5	73
Total	1	2	13	15	8	14	13	15	19	18	20	4	....	10	152
Males	71	25	2	....	1	1	1	....	....	1	1	....	....	1	104
Females	57	15	2	1	1	3	2	1	....	1	....	....	....	....	83
Total	128	40	4	1	2	4	3	1	....	2	1	....	....	1	187
Males	15	11	8	....	....	4	3	1	2	....	....	....	....	2	46
Females	14	5	5	1	4	5	....	1	....	....	....	....	....	1	36
Total	29	16	13	1	4	9	3	2	2	....	....	....	....	3	82
Males	....	1	1	....	2	....	1	1	....	....	....	....	....	....	6
Females	....	....	....	....	....	3	1	....	1	....	....	....	1	....	6
Total	....	1	1	....	2	3	2	1	1	....	....	....	1	....	12
Males	46	36	8	7	64	364	231	143	79	79	33	10	....	21	1121
Females	45	35	15	45	165	466	272	149	66	41	31	3	....	46	1379
Total	91	71	23	52	229	830	503	292	145	120	64	13	....	67	2500
Males	21	3	1	1	1	1	....	....	....	1	1	....	....	1	31
Females	23	1	1	1	2	....	2	....	....	....	....	1	....	....	31
Total	44	4	2	2	3	1	2	....	....	1	1	1	....	1	62
Males	4	5	....	1	....	1	....	....	....	....	....	....	....	....	11
Females	7	2	....	1	1	1	....	....	....	....	....	....	....	....	12
Total	11	7	....	2	1	2	....	....	....	....	....	....	....	....	23
Males	913	163	41	27	77	396	263	208	165	206	145	56	2	53	2715
Females	710	130	38	70	189	517	334	225	174	178	124	36	3	68	2796
Total	1623	293	79	97	266	913	597	433	339	384	269	92	5	121	5511
Males	3	2	1	2	1	10	11	22	38	61	44	20	....	15	230
Females	....	4	....	2	4	8	12	16	22	45	32	15	....	11	171
Total	3	6	1	4	5	18	23	38	60	106	76	35	....	26	401

TABLE E.—

CAUSE OF DEATH.	MONTHS. January.	February.	March.	April.	May.	June	July.	August.	September.	October.	November.	December.	Total.
Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia)............M	....	1	1	....	....	1	....	....	1	2	1	....	7
" " F	....	....	....	....	....	....	....	....	....	....	1	1	2
Total	....	1	1	....	....	1	....	....	1	2	2	1	9
Chorea (St. Vitus' Dance)................M	....	....	....	....	....	1	....	....	1	....	....	....	2
" " ....F	....	1	....	....	....	....	....	1	....	....	1	....	3
Total	....	1	....	....	....	1	....	1	1	....	1	....	5
Convulsio (Convulsions) ....M	27	31	34	26	31	27	28	25	22	15	28	15	309
" " ....F	14	26	28	25	16	19	19	25	20	15	15	17	239
Total	41	57	62	51	47	46	47	50	42	30	43	32	548
Encephalitis (Inflammation of Brain) ....M	8	9	7	4	11	3	5	2	5	5	7	5	71
" " ....F	5	5	10	2	7	5	4	12	9	6	2	....	67
Total	13	14	17	6	18	8	9	14	14	11	9	5	138
Epilepsia (Epilepsy) ....M	1	3	6	4	5	7	2	5	1	5	1	3	43
" " ....F	4	3	....	5	3	1	5	2	2	....	3	9	37
Total	5	6	6	9	8	8	7	7	3	5	4	12	80
Hemiplegia (Paralysis of one side of body).M	1	....	2	....	1	1	....	....	....	1	....	....	6
" " " .F	....	....	1	2	....	....	1	....	....	1	....	....	5
Total	1	....	3	2	1	1	1	....	....	2	....	....	11
Hysteria ....M	....	....	....	....	....	....	....	....	....	....	....	....	....
" ....F	....	....	1	....	....	1	....	....	....	....	....	....	2
Total	....	....	1	....	....	1	....	....	....	....	....	....	2
Insania (Insanity) ....M	2	2	2	2	3	1	....	....	2	....	1	2	17
" " ....F	1	....	....	5	....	....	....	3	....	....	....	2	11
Total	3	2	2	7	3	1	....	3	2	....	1	4	28
Insolatio (Sunstroke) ....M	....	....	....	....	....	....	1	5	....	....	....	..	6
" " ....F	....	....	....	....	....	....	1	1	....	....	....	....	2
Total	....	....	....	....	....	....	2	6	....	....	....	....	8
Meningitis ....M	23	20	25	25	24	15	15	23	16	16	12	13	227
" ....F	10	11	17	16	15	15	23	20	14	9	9	18	177
Total	33	31	42	41	39	30	38	43	30	25	21	31	404

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	....	2	....	1	....	2	....	....	....	2	7
Females	....	....	....	....	....	....	....	....	2	....	....	....	....	....	2
Total	....	....	....	....	....	2	....	1	2	2	....	....	....	2	9
Males	....	....	....	....	....	....	....	1	....	....	....	....	....	1	2
Females	....	....	....	1	....	....	....	....	2	....	....	....	....	....	3
Total	....	....	....	1	....	....	....	1	2	....	....	....	....	1	5
Males	250	53	6	....	....	....	....	....	....	....	....	....	....	....	309
Females	169	50	5	1	3	5	2	....	....	1	....	1	....	2	239
Total	419	103	11	1	3	5	2	....	....	1	....	1	....	2	548
Males	19	11	5	5	3	6	7	4	2	3	4	....	....	2	71
Females	18	17	4	8	2	4	1	1	3	4	....	....	....	5	67
Total	37	28	9	13	5	10	8	5	5	7	4	....	....	7	138
Males	1	2	....	4	5	4	13	8	3	2	1	....	....	....	43
Females	1	2	1	2	3	6	5	3	7	4	1	1	....	1	37
Total	2	4	1	6	8	10	18	11	10	6	2	1	....	1	80
Males	....	....	....	1	....	....	....	1	....	2	2	....	....	....	6
Females	....	....	....	....	....	....	....	1	....	....	4	....	....	....	5
Total	....	....	....	1	....	....	....	2	....	2	6	....	....	....	11
Males	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Females	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Total	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Males	2	....	....	....	....	3	3	2	5	1	1	....	....	....	17
Females	....	....	....	....	....	2	2	3	1	2	1	....	....	....	11
Total	2	....	....	....	....	5	5	5	6	3	2	....	....	....	28
Males	....	1	....	....	2	....	1	1	....	1	....	....	....	....	6
Females	....	1	....	....	....	....	1	....	....	....	....	....	....	....	2
Total	....	2	....	....	2	....	2	1	....	1	....	....	....	....	8
Males	77	54	17	9	9	20	10	5	3	10	3	2	2	6	227
Females	49	32	19	9	8	15	12	8	3	11	3	1	....	7	177
Total	126	86	36	18	17	35	22	13	6	21	6	3	2	13	404

TABLE E.—

CAUSE OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Myelitis (Inflammation of Spinal Cord) ... M	2	1	4	1	3	6	3	3	6	3	....	3	35
" " " .. F	4	3	1	3	4	2	1	4	6	3	1	3	35
Total	6	4	5	4	7	8	4	7	12	6	1	6	70
Necrencephalus (Softening of Brain) ...... M	1	....	2	7	....	3	5	5	3	4	....	1	31
" " ...... F	1	2	1	3	3	3	....	1	1	1	....	2	18
Total	2	2	3	10	3	6	5	6	4	5	....	3	49
Paralysis (Palsy) ...... M	22	23	21	15	22	20	19	17	19	19	12	23	232
" " ...... F	19	15	17	11	15	12	11	11	17	16	20	13	177
Total	41	38	38	26	37	32	30	28	36	35	32	36	409
Paraplegia (Palsy of Lower Extremities) .. M	1	1	1	1	....	....	1	1	....	....	....	....	6
" " " .. F	....	1	....	....	....	....	....	....	....	....	1	1	3
Total	1	2	1	1	....	....	1	1	....	....	1	1	9
Tetanus (Lockjaw) ...... M	....	....	....	....	2	....	....	....	1	1	1	1	6
" " ...... F	....	....	....	1	....	....	....	1	....	....	....	....	2
Total	....	....	....	1	2	....	....	1	1	1	1	1	8
Neuralgia ...... M	....	....	....	....	....	....	1	....	....	....	....	....	1
...... F	....	....	....	....	....	....	4	....	....	....	....	....	4
Total	....	....	....	....	....	....	5	....	....	....	....	....	5
ORDER 2. DISEASES OF THE CIRCULATORY SYSTEM—*Cardiaci.*													
Aneurisma (Aneurism) ...... M	....	....	1	....	....	....	1	1	....	....	....	....	3
" " ...... F	...	....	....	.. ..	....	....	....	....	....	....	....	....	....
Total	....	....	1	....	....	....	1	1	....	....	....	....	3
Angina Pectoris (Breast Pang) ...... M	....	1	....	....	....	....	....	....	....	....	....	....	1
" " ...... F	2	....	....	....	....	....	....	2	....	....	1	....	5
Total	2	1	....	....	....	....	....	2	....	....	1	....	6
Atrophia Cordis (Atrophy of Heart) ...... M	....	....	1	....	....	....	1	1	2	....	....	....	5
" " ...... F	....	....	1	....	....	....	....	....	1	1	1	....	4
Total	.. .	....	2	....	....	....	1	1	3	1	1	....	9

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	3	7	1	....	5	6	1	2	3	5	2	....	....	....	35
Females	6	6	1	3	....	4	1	6	5	2	....	....	....	1	35
Total	9	13	2	3	5	10	2	8	8	7	2	....	....	1	70
Males	3	2	....	....	....	3	1	2	5	4	9	....	....	2	31
Females	1	....	....	....	....	2	....	1	2	4	5	2	1	....	18
Total	4	2	....	....	....	5	1	3	7	8	14	2	1	2	49
Males	....	3	1	2	3	8	12	23	26	36	66	42	3	7	232
Females	1	3	3	1	1	5	2	9	19	28	66	31	....	8	177
Total	1	6	4	3	4	13	14	32	45	64	132	73	3	15	409
Males	....	....	....	....	....	....	2	1	1	1	1	....	....	....	6
Females	....	....	....	....	....	....	1	....	1	....	1	....	....	....	3
Total	....	....	....	....	....	....	3	1	2	1	2	....	....	....	9
Males	....	....	1	....	....	1	2	1	1	....	....	....	....	....	6
Females	....	....	....	....	....	1	1	....	....	....	....	....	....	....	2
Total	....	....	1	....	....	2	3	1	1	....	....	....	....	....	8
Males	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Females	1	....	....	....	1	....	1	....	1	....	....	....	....	....	4
Total	1	....	....	....	2	....	1	....	1	....	....	....	....	....	5
Males	....	....	....	....	....	....	1	2	....	....	....	....	....	....	3
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	1	2	....	....	....	....	....	....	3
Males	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Females	....	....	....	....	....	1	2	1	....	1	....	....	....	....	5
Total	....	....	....	....	....	1	3	1	....	1	....	....	....	....	6
Males	....	....	....	....	....	....	....	....	....	2	1	2	....	....	
Females	....	....	....	....	1	....	....	....	....	2	1	....	....	1	4
Total	....	....	....	....	1	....	....	....	....	4	2	2	....	1	9

TABLE E.—

CAUSE OF DEATH.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Carditis (Inflammation of Heart)	M	....	....	....	....	1	....	....	....	....	....	1	....	2
" " "	F	1	....	1	....	....	....	....	....	....	....	....	1	3
Total		1	....	1	....	1	....	....	....	....	....	1	1	5
Degeneratio cordis (Fatty Degeneration of Heart)	M	....	....	1	....	....	....	....	2	....	....	1	1	5
" " "	F	1	....	....	....	....	....	1	....	....	....	....	....	2
Total		1	....	1	....	....	....	1	2	....	....	1	1	7
Endocarditis (Inflammation of Membrane lining Heart)	M	1	....	1	1	....	....	....	1	....	....	....	....	4
" " "	F	1	....	....	....	1	....	1	....	....	....	....	....	3
Total		2	....	1	1	1	....	1	1	....	....	....	....	7
Epistaxes (Nosebleed)	M	....	....	....	....	....	....	1	....	....	....	1	....	2
" "	F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total		....	....	....	....	....	....	1	....	....	....	1	....	2
Hydrops Pericardii (Dropsy of Heart)	M	....	2	2	3	....	4	2	2	1	....	2	....	18
" " "	F	3	1	2	3	2	5	....	1	2	3	3	1	26
Total		3	3	4	6	2	9	2	3	3	3	5	1	44
Hypertrophia cordis (Enlarge't of Heart)	M	1	....	1	1	....	1	....	....	....	....	....	....	4
" " "	F	....	....	1	1	1	....	1	....	....	....	....	....	4
Total		1	....	2	2	1	1	1	....	....	....	....	....	8
Morbus valvularum cordis (Valvular Disease of Heart)	M	38	31	35	31	47	41	34	35	36	37	36	42	443
" " "	F	42	40	45	40	45	35	45	35	37	35	40	39	478
Total		80	71	80	71	92	76	79	70	73	72	76	81	921
Pericarditis	M	....	....	1	....	1	2	....	....	....	1	....	....	5
"	F	....	....	1	....	....	....	....	....	....	....	....	1	2
Total		....	....	2	....	1	2	....	....	....	1	....	1	7
Phlebitis (Inflammation of Veins)	M	....	....	....	1	....	....	....	....	....	....	....	....	1
" " "	F	....	1	....	1	....	....	....	....	....	....	....	....	2
Total		....	1	....	2	....	....	....	....	....	....	....	....	3
Syncope (Fainting)	M	....	....	1	....	....	....	....	....	....	1	....	....	2
" "	F	....	1	1	1	....	....	....	....	....	1	....	....	4
Total		.. .	1	2	1	....	....	....	....	....	2	....	....	6

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	1	....	....	....	....	....	....	1	....	....	2
Females	....	....	....	....	....	....	....	....	1	1	1	....	....	....	3
Total	....	....	....	....	1	....	....	....	1	1	1	1	....	....	5
Males	....	....	2	....	....	....	....	2	....	1	....	....	....	....	5
Females	....	....	....	....	1	....	....	....	....	1	....	....	....	....	2
Total	....	....	2	....	1	....	....	2	....	2	....	....	....	....	7
Males	....	....	....	....	....	....	2	....	1	....	1	....	....	....	4
Females	....	1	....	1	1	....	....	....	....	....	....	....	....	....	3
Total	....	1	....	1	1	....	2	....	1	....	1	....	....	....	7
Males	....	....	....	....	....	....	....	....	1	1	....	....	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	1	....	....	....	....	2
Males	....	1	....	1	....	2	1	....	4	5	2	2	....	....	18
Females	1	....	....	1	1	....	5	4	2	3	4	4	....	1	26
Total	1	1	....	2	1	2	6	4	6	8	6	6	....	1	44
Males	....	....	....	....	....	....	1	....	1	1	1	....	....	....	4
Females	....	....	....	....	....	1	....	1	....	1	1	....	....	....	4
Total	....	....	....	....	....	1	1	1	1	2	2	....	....	....	8
Males	11	7	5	6	12	32	23	38	81	95	96	17	1	19	443
Females	11	6	10	15	19	56	41	50	88	95	46	21	....	20	478
Total	22	13	15	21	31	88	64	88	169	190	142	38	1	39	921
Males	....	....	....	....	1	1	1	....	1	....	....	....	....	1	5
Females	....	....	1	....	1	....	....	....	....	....	....	....	....	....	2
Total	....	....	1	....	2	1	1	....	1	....	....	....	....	1	7
Males	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1
Females	....	....	1	....	....	1	....	....	....	....	....	....	....	....	2
Total	....	....	1	....	....	1	....	....	....	1	....	....	....	....	3
Males	....	....	....	....	....	....	....	....	2	....	....	....	....	....	2
Females	....	....	....	....	....	....	1	....	1	....	1	....	....	1	4
Total	....	....	....	....	....	....	1	....	3	....	1	....	....	1	6

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Order 3. Diseases of the Respiratory System—*Pneumonici.*													
Apoplexia Pulmonalis (Congest'n of Lungs) M	25	26	29	30	23	15	11	11	6	9	16	27	228
" " " " F	24	25	34	29	23	9	7	10	7	8	13	19	208
Total	49	51	63	59	46	24	18	21	13	17	29	46	436
Bronchitis M	23	28	46	20	27	25	15	9	10	14	15	14	246
" F	23	26	34	36	33	27	11	11	8	12	10	20	251
Total	46	54	80	56	60	52	26	20	18	26	25	34	497
Empyema M	....	....	....	....	....	....	1	....	....	....	....	....	1
" F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	1	....	....	....	....	....	1
Emphysema M	....	1	1	....	1	....	2	....	....	....	....	....	5
" F	....	....	....	2	1	....	....	2	....	....	....	....	5
Total	....	1	1	2	2	....	2	2	....	....	....	....	10
Laryngitis (Inflammation of Larynx) M	....	....	2	....	2	2	1	1	4	3	1	3	19
" " " F	1	....	4	3	....	1	....	2	....	3	1	1	16
Total	1	....	6	3	2	3	1	3	4	6	2	4	35
Pleuritis (Pleurisy) M	3	....	3	7	3	5	2	3	7	4	....	1	38
" " F	1	3	1	2	1	2	....	....	1	2	2	....	15
Total	4	3	4	9	4	7	2	3	8	6	2	1	53
Pneumonia (Inflammation of Lungs) M	84	70	109	91	90	45	32	35	25	42	57	57	737
" " " F	59	64	86	85	70	50	29	20	19	30	40	46	598
Total	143	134	195	176	160	95	61	55	44	72	97	103	1335
Order 4. Diseases of the Digestive System—*Enterici.*													
Ascites (Abdominal Dropsy) M	....	....	....	....	....	1	....	1	....	1	1	....	4
" " F	....	....	....	....	1	1	....	....	....	1	....	2	5
Total	....	....	....	....	1	2	....	1	....	2	1	2	9
Chololithus (Gallstones) M	....	....	1	....	....	1	....	....	....	....	....	....	2
" " F	....	....	....	....	....	1	....	1	....	....	....	1	3
Total	....	....	1	....	....	2	....	1	....	....	....	1	5

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	66	36	4	8	6	12	11	14	11	24	25	5	....	6	228
Females	60	30	12	5	6	12	14	6	6	13	27	10	....	7	208
Total	126	66	16	13	12	24	25	20	17	37	52	15	....	13	436
Males	77	52	5	....	4	4	2	8	11	24	28	19	3	9	246
Females	79	49	4	3	1	13	4	12	14	29	27	8	....	8	251
Total	156	101	9	3	5	17	6	20	25	53	55	27	3	17	497
Males	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Males	....	1	....	....	....	....	....	....	3	1	....	....	....	....	5
Females	1	....	1	....	....	....	1	1	1	....	....	....	....	....	5
Total	1	1	1	....	....	....	1	1	4	1	....	....	....	....	10
Males	4	5	....	1	....	....	2	2	4	....	....	1	....	....	19
Females	6	4	1	1	....	3	1	....	....	....	....	....	....	....	16
Total	10	9	1	2	....	3	3	2	4	....	....	1	....	....	35
Males	1	2	....	1	2	11	4	3	5	4	5	....	....	....	38
Females	1	....	....	1	....	1	3	2	4	1	2	....	....	....	15
Total	2	2	....	2	2	12	7	5	9	5	7	....	....	....	53
Males	159	85	25	16	25	72	56	51	73	70	61	15	....	29	737
Females	92	88	20	9	32	65	51	61	36	57	39	23	....	25	598
Total	251	173	45	25	57	137	107	112	109	127	100	38	....	54	1335
Males	....	....	....	....	....	....	1	2	....	1	....	....	....	....	4
Females	....	....	....	....	....	....	2	....	3	....	....	....	....	....	5
Total	....	....	....	....	....	....	3	2	3	1	....	....	....	....	9
Males	....	....	....	....	....	....	....	....	1	1	....	....	....	....	2
Females	....	....	....	....	....	....	....	1	....	....	2	....	....	....	3
Total	....	....	....	....	....	....	....	1	1	1	2	....	....	....	5

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cirrhosis .... M	....	....	....	2	2	1	....	....	1	1	1	1	9
" .... F	1	....	....	1	1	1	....	1	3	2	....	2	12
Total	1	....	....	3	3	2	....	1	4	3	1	3	21
Colica (Colic) .... M	....	....	1	....	....	1	1	....	....	....	....	....	3
" " .... F	....	....	....	1	1	....	....	1	....	....	....	....	3
Total	....	....	1	1	1	1	1	1	....	....	....	....	6
Dyspepsia (Indigestion) .... M	4	1	4	4	4	3	3	1	....	3	2	2	31
" " .... F	2	....	1	....	1	2	4	1	2	1	....	2	16
Total	6	1	5	4	5	5	7	2	2	4	2	4	47
Enteritis (Inflammation of Bowels) ...... M	21	17	29	15	16	10	14	25	33	22	13	20	235
" " " ...... F	25	24	18	8	14	10	18	18	30	12	13	17	207
Total	46	41	47	23	30	20	32	43	63	34	26	37	442
Fistula .... M	....	....	....	....	....	....	....	1	....	....	....	....	1
" .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	1	....	....	....	....	1
Gastritis (Inflammation of Stomach) ...... M	3	8	7	6	4	9	3	5	7	6	7	5	70
" " " ...... F	5	4	3	4	5	6	6	8	2	6	1	6	56
Total	8	12	10	10	9	15	9	13	9	12	8	11	126
Hæmatemesis (Blood Vomit) .... M	....	....	....	....	....	1	....	....	....	....	1	....	2
" " " .... F	....	....	....	....	....	....	....	....	....	....	....	1	1
Total	....	....	....	....	....	1	....	....	....	....	1	1	3
Hæmorrhois (Piles) .... M	....	....	1	....	....	2	....	....	....	....	....	....	3
" " .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	1	....	....	2	....	....	....	....	....	....	3
Hepatitis (Inflammation of Liver) .... M	6	4	9	3	5	7	9	5	5	6	4	13	76
" " " .... F	4	3	7	8	8	6	3	4	9	8	2	1	63
Total	10	7	16	11	13	13	12	9	14	14	6	14	139
Hernia (Rupture) .... M	....	2	2	3	5	3	3	1	2	1	2	1	25
" " .... F	2	....	2	1	1	1	....	1	1	....	1	....	10
Total	2	2	4	4	6	4	3	2	3	1	3	1	35

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	....	....	2	....	4	2	1	....	....	....	9
Females	....	1	....	....	....	....	....	3	3	4	....	....	....	1	12
Total	....	1	....	....	....	....	2	3	7	6	1	....	....	1	21
Males	3	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Females	1	....	1	....	....	....	....	....	....	....	....	....	1	....	3
Total	4	....	1	.. ..	....	....	....	....	....	....	....	....	1	....	6
Males	4	1	....	....	....	1	....	3	7	8	5	2	...	....	31
Females	2	....	....	....	....	....	3	....	2	4	4	....	....	1	16
Total	6	1	....	....	....	1	3	3	9	12	9	2	....	1	47
Males	58	24	5	10	22	25	14	15	13	21	12	9	....	7	235
Females	43	22	11	17	17	18	21	17	12	11	8	4	2	4	207
Total	101	46	16	27	39	43	35	32	25	32	20	13	2	11	442
Males	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1
Males	13	3	1	....	1	5	3	5	6	17	9	4	....	3	70
Females	9	5	1	1	....	6	12	4	4	4	9	1	....	....	56
Total	22	8	2	1	1	11	15	9	10	21	18	5	....	3	126
Males	....	....	....	1	....	....	....	1	....	....	....	....	....		2
Females	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1
Total	....	....	....	1	....	....	....	2	....	....	....	....	....	....	3
Males	....	....	....	....	....	....	....	....	1	2	....	....	....	....	3
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	2	....	....	....	....	3
Males	5	4	1	1	1	3	6	12	10	17	14	....	....	2	76
Females	1	2	5	....	2	5	5	5	11	12	11	2	....	2	63
Total	6	6	6	1	3	8	11	17	21	29	25	2	....	4	139
Males	1	1	....	...	....	3	2	4	3	2	5	1	....	3	2
Females	....	....	....	....	1	....	2	1	2	2	1	1	....	....	10
Total	1	1	....	....	1	3	4	5	5	4	6	2	....	3	35

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Icterus (Jaundice) ...... M	3	1	2	2	2	....	2	2	1	4	3	1	23
" " ...... F	3	2	2	3	....	....	2	1	2	3	3	2	23
Total	6	3	4	5	2	....	4	3	3	7	6	3	46
Intus-susceptio (Invagination of Gut) .... M	....	1	1	....	....	....	....	1	....	....	....	....	3
" " " .... F	....	1	1	1	....	....	1	1	....	....	....	....	5
Total	....	2	2	1	....	....	1	2	....	....	....	....	8
Obstipatio (Constipation) ...... M	3	2	2	3	1	1	1	1	1	1	....	2	18
" " ...... F	1	2	1	....	1	....	1	....	1	1	3	1	12
Total	4	4	3	3	2	1	2	1	2	2	3	3	30
Œsophagitis (Inflammation of Gullet) .... M	....	....	1	....	....	....	....	....	....	....	....	....	1
" " " .... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	1	....	....	....	....	....	....	....	....	....	1
Peritonitis (Inflammation of Abdomen) ... M	5	2	7	10	8	1	10	3	2	4	4	4	60
" " " ... F	4	5	7	9	9	8	9	6	4	4	4	4	73
Total	9	7	14	19	17	9	19	9	6	8	8	8	133
Perforatio Intestini (Perforation of Intestine) ...... M	....	....	....	....	....	....	....	....	....	....	....	....	....
" " " F	....	....	....	....	....	....	....	1	....	....	....	....	1
Total	....	....	....	....	....	....	....	1	....	....	....	....	1
Splenitis (Inflammation of Spleen) ...... M	1	....	....	1	....	1	....	1	....	1	....	....	5
" " " ...... F	....	....	....	1	1	....	....	....	1	....	....	....	3
Total	1	....	....	2	1	1	....	1	1	1	....	....	8
Stomatitis (Inflammation of Mouth) ...... M	....	....	1	1	....	....	1	....	....	1	....	1	5
" " " ...... F	....	....	....	1	....	....	1	1	....	....	....	....	3
Total	....	....	1	2	....	....	2	1	....	1	....	1	8
Strictura Intestina (Stricture of Intestine). M	1	1	1	....	....	....	....	....	....	....	....	1	4
" " " F	....	1	....	....	1	1	....	....	....	2	....	....	5
Total	1	2	1	....	1	1	....	....	....	2	....	1	9
Typhlitis ...... M	....	....	....	....	....	....	1	1	....	....	....	....	2
" ...... F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	1	1	....	....	....	....	2

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	9	1	1	....	1	....	1	1	3	2	3	1	....	....	23
Females	5	1	....	....	2	3	1	1	5	3	1	....	....	1	23
Total	14	2	1	....	3	3	2	2	8	5	4	1	....	1	46
Males	1	....	....	....	....	1	....	....	....	....	1	....	....	....	3
Females	2	....	....	....	....	....	....	1	2	....	....	....	....	....	5
Total	3	....	....	....	....	1	....	1	2	....	1	....	....	....	8
Males	5	....	....	....	1	1	3	1	3	2	....	1	....	1	18
Females	2	....	....	....	1	1	1	....	....	3	4	....	....	....	12
Total	7	....	....	....	2	2	4	1	3	5	4	1	....	1	30
Males	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Males	8	3	3	2	8	10	5	5	8	2	1	....	....	5	60
Females	1	1	3	2	9	23	15	3	6	1	3	....	1	5	73
Total	9	4	6	4	17	33	20	8	14	3	4	....	1	10	133
Males	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Females	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Total	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Males	....	....	....	1	....	....	....	2	1	....	....	....	....	1	5
Females	....	....	....	....	....	1	....	....	1	1	....	....	....	....	3
Total	....	....	....	1	....	1	....	2	2	1	....	....	....	1	8
Males	5	....	....	....	....	....	....	....	....	....	....	....	....	....	5
Females	2	....	....	....	....	1	....	....	....	....	....	....	....	....	3
Total	7	....	....	....	....	1	....	....	....	....	....	....	....	....	8
Males	1	....	....	....	....	....	....	....	1	....	2	....	....	....	4
Females	1	1	....	....	....	....	....	1	....	....	1	....	....	1	5
Total	2	1	....	....	....	....	....	1	1	....	3	....	....	1	9
Males	....	1	....	1	....	....	....	....	....	....	....	....	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	1	....	1	....	....	....	....	....	....	....	....	....	....	2

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Ulceratio intestini (Ulcerat'n of Intestines). M	....	....	....	....	1	....	....	1	1	....	....	....	3
" " " F	....	....	....	1	....	....	1	1	1	....	....	....	4
Total	....	....	....	1	1	....	1	2	2	....	....	....	7
Ulcer of Stomach M	3	2	4	....	2	2	....	1	....	1	....	2	17
" F	....	2	2	....	....	2	4	3	....	2	....	1	16
Total	3	4	6	....	2	4	4	4	....	3	....	3	33
ORDER 5. DISEASES OF THE URINARY SYSTEM—*Nephritici.*													
Calculus (Stone) M	....	....	1	....	3	....	....	2	1	1	....	....	8
" F	....	....	....	....	....	1	....	....	....	....	1	....	2
Total	....	....	1	....	3	1	....	2	1	1	1	....	10
Cystitis (Inflammation of Bladder) M	8	3	5	7	2	3	1	5	2	7	3	6	52
" " F	....	1	....	....	....	....	....	1	....	....	....	....	2
Total	8	4	5	7	2	3	1	6	2	7	3	6	54
Diabetes M	6	3	3	4	4	....	3	3	2	1	8	3	40
" F	2	4	2	4	3	2	....	1	2	....	....	....	20
Total	8	7	5	8	7	2	3	4	4	1	8	3	60
Ischuria (Retention of Urine) M	2	1	....	....	1	....	1	4	....	1	....	....	10
" " F	....	....	....	....	1	....	....	....	....	....	....	....	1
Total	2	1	....	....	2	....	1	4	....	1	....	....	11
Lithiasis (Gravel) M	1	4	5	1	2	1	....	....	1	2	....	4	21
" " F	....	....	....	....	....	....	....	....	....	1	....	....	1
Total	1	4	5	1	2	1	....	....	1	3	....	4	22
Morbus prostaticus (Diseased Prostrate) M	....	....	....	1	....	....	....	....	1	1	1	....	4
" " " F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	1	....	....	....	....	1	1	1	....	4
Nephria (Bright's Disease) M	2	5	5	6	10	8	8	5	10	5	6	4	74
" " F	1	5	5	4	3	4	1	5	6	3	5	2	44
Total	3	10	10	10	13	12	9	10	16	8	11	6	118

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	1	1	....	....	....	....	1	....	....	....	....	....	....	....	3
Females	1	....	....	2	1	....	....	....	....	....	....	....	....	....	4
Total	2	1	....	2	1	....	1	....	....	....	....	....	....	....	7
Males	2	1	....	....	1	....	....	5	2	4	1	....	....	1	17
Females	2	....	....	....	....	2	....	1	4	4	3	....	....	....	16
Total	4	1	....	....	1	2	....	6	6	8	4	....	....	1	33
Males	....	....	....	....	....	....	....	....	....	1	5	2	....	....	8
Females	....	....	....	....	....	....	....	....	....	....	2	....	....	....	2
Total	....	....	....	....	....	....	....	....	....	1	7	2	....	....	10
Males	1	1	1	....	....	1	1	3	3	15	16	8	....	2	52
Females	....	....	....	....	....	....	....	....	2	....	....	....	....	....	2
Total	1	1	1	....	....	1	1	3	5	15	16	8	....	2	54
Males	....	....	2	3	1	6	5	3	7	7	4	2	....	....	40
Females	....	....	2	4	2	1	....	1	4	2	1	2	....	1	20
Total	....	....	4	7	3	7	5	4	11	9	5	4	....	1	60
Males	....	....	....	....	....	....	....	1	2	2	1	3	....	1	10
Females	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Total	....	....	....	....	....	....	....	1	3	2	1	3	....	1	11
Males	....	....	....	....	....	1	1	....	....	3	9	7	....	....	21
Females	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1
Total	....	....	....	....	....	1	1	....	....	3	10	7	....	....	22
Males	....	....	....	....	....	....	....	2	....	....	1	1	....	....	4
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	2	....	....	1	1	....	....	4
Males	....	1	....	4	1	9	8	13	8	13	12	2	....	3	74
Females	....	2	3	1	2	5	7	4	11	6	3	....	....	....	44
Total	....	3	3	5	3	14	15	17	19	19	15	2	....	3	118

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Nephritis (Inflammation of Kidneys) .....M	11	3	5	5	11	3	5	3	5	8	5	12	76
" " " .....F	5	5	5	1	5	3	2	3	1	4	7	4	45
Total	16	8	10	6	16	6	7	6	6	12	12	16	121
Stricture of Urethra.....M	....	1	....	....	....	....	....	....	....	....	1	....	2
" " .....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	1	....	....	....	....	....	....	....	....	1	....	2
ORDER 6. DISEASES OF THE GENERATIVE ORGANS. *Genetici.*													
Hydrocele (Dropsy of Testicle).....M	....	....	....	....	....	1	1	....	....	....	....	....	2
" " " .....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	1	1	....	....	....	....	....	2
Hydrops ovarii (Ovarian Dropsy) .....F	....	....	....	....	1	1	....	....	1	....	....	....	3
Metritis (Inflammation of Womb).....F	2	1	1	1	2	2	2	3	4	1	1	1	21
Morbus uteri (Uterine Disease) .....F	1	2	....	2	....	....	1	....	3	3	1	1	14
Tumor ovarii (Ovarian Tumor).....F	3	2	1	1	3	1	1	....	1	....	5	1	19
Tumor uteri (Uterine Tumor).....F	2	....	1	1	2	....	2	....	1	1	3	1	14
ORDER 7. DISEASES OF THE LOCOMOTIVE SYSTEM. *Myostici.*													
Arthritis (Inflammation of Joints).....M	....	....	1	....	....	....	1	....	....	....	....	....	2
" " " .....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	1	....	....	....	1	....	....	....	....	....	2
Caries .....M	....	1	1	2	....	....	....	2	....	....	1	....	7
" .....F	....	1	1	....	1	....	....	1	....	....	....	1	5
Total	....	2	2	2	1	....	....	3	....	....	1	1	12
Exostitis (Tumor of Bone).....M	....	....	....	....	....	....	....	....	....	....	1	....	1
" " " .....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	....	....	1	....	1
Necrosis .....M	....	....	....	....	1	....	....	....	....	....	....	....	1
" .....F	....	....	....	....	....	1	....	....	1	....	....	1	3
Total	....	....	....	....	1	1	....	....	1	....	....	1	4

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	5	2	2	2	2	5	2	3	8	14	15	13	1	2	76
Females	2	3	1	1	3	5	5	4	5	6	3	5	....	2	45
Total	7	5	3	3	5	10	7	7	13	20	18	18	1	4	121
Males	....	....	....	....	....	....	....	....	....	1	....	1	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	....	1	....	1	....	....	2
Males	....	....	....	....	....	....	....	....	1	....	....	1	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....	....	1	....	....	1	....	....	2
Females	....	....	....	....	....	1	....	1	....	....	1	....	....	....	3
Females	....	....	....	....	....	5	6	6	4	....	....	....	....	....	21
Females	....	....	....	....	....	1	3	2	5	2	....	....	....	1	14
Females	....	....	....	....	....	2	1	3	5	6	1	....	....	1	19
Females	....	....	....	....	....	2	5	2	3	2	....	....	....	....	14
Males	1	....	....	....	....	....	....	....	....	....	....	1	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	....	....	....	....	....	....	....	....	....	1	....	....	2
Males	....	....	....	1	2	1	1	....	....	2	....	....	....	....	7
Females	....	....	....	....	2	1	....	....	....	1	1	....	....	....	5
Total	....	....	....	1	4	2	1	....	....	3	1	....	....	....	12
Males	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Males	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Females	....	....	....	....	....	2	....	....	....	1	....	....	....	....	3
Total	....	....	....	....	1	2	....	....	....	1	....	....	....	....	4

TABLE E.—

CAUSE OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Ostitis (Inflammation of Bones) ....M	1	....	....	....	....	....	....	....	....	1	....	....	2
" " " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	....	....	....	....	....	....	....	1	....	....	2
Synovitis ....M	....	....	....	1	....	....	....	....	....	....	....	....	1
" ....F	....	....	....	....	....	....	....	....	1	1	....	....	2
Total	....	....	....	1	....	....	....	....	1	1	....	....	3
ORDER 8. DISEASES OF THE INTEGUMENTARY SYSTEM. *Chrotici.*													
Abscessus (Abscess) ....M	6	2	6	6	3	1	5	2	5	10	8	6	60
" " ....F	2	3	4	5	5	5	1	2	3	5	5	5	45
Total	8	5	10	11	8	6	6	4	8	15	13	11	105
Phlegmon. ....M	....	1	....	....	1	2	....	1	....	....	....	....	5
" ....F	....	....	....	....	....	....	....	....	1	....	....	....	1
Total	....	1	....	....	1	2	....	1	1	....	....	....	6
Total Local Diseases......................M	371	339	463	366	415	306	270	284	267	288	284	314	3968
" " ....F	296	303	366	352	326	264	239	240	238	217	237	266	3344
Total	667	642	829	718	741	570	509	524	505	505	521	580	7312
CLASS IV. DEVELOPMENTAL DISEASES. *Metamorphici.*													
ORDER 1. DEVELOPMENTAL DISEASES OF CHILDREN. *Paidici.*													
Anus imperforatus (Imperforate Anus)....M	....	....	....	....	1	....	....	2	....	....	1	....	4
" " " " ....F	2	....	....	3	....	....	....	2	....	....	1	....	8
Total	2	....	....	3	1	....	....	4	....	....	2	....	12
Atelectasis pulmonum ....M	2	3	2	3	1	....	....	2	....	1	2	3	19
" " ....F	1	2	1	2	2	1	....	2	....	1	3	2	17
Total	3	5	3	5	3	1	....	4	....	2	5	5	36
Cyanosis ....M	....	....	1	....	....	1	....	....	1	....	....	....	3
" ....F	1	1	....	1	....	2	....	....	....	1	....	....	6
Total	1	1	1	1	....	3	....	....	1	1	....	....	9

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Males	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Females	....	....	....	1	1	....	....	....	....	....	....	....	....	....	2
Total	....	....	....	1	1	....	....	....	....	....	....	....	....	1	3
Males	6	2	2	4	10	7	6	5	6	5	3	....	....	4	60
Females	3	3	2	3	3	6	6	6	4	3	5	1	....	....	45
Total	9	5	4	7	13	13	12	11	10	8	8	1	....	4	105
Males	....	....	....	....	....	2	....	2	1	....	....	....	....	....	5
Females	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Total	....	....	....	....	....	3	....	2	1	....	....	....	....	....	6
Males	806	370	91	86	134	278	230	282	386	502	473	185	10	135	3968
Females	575	334	112	95	133	297	259	354	320	383	327	133	5	117	3344
Total	1381	704	203	181	267	575	489	636	706	885	800	318	15	252	7312
Males	4	....	....	....	....	....	....	....	....	....	....	....	....	....	4
Females	6	1	1	....	....	....	....	....	....	....	....	....	....	....	8
Total	10	1	1	....	....	....	....	....	....	....	....	....	....	....	12
Males	17	2	....	....	....	....	....	....	....	....	....	....	....	....	19
Females	16	1	....	....	....	....	....	....	....	....	....	....	....	....	17
Total	33	3	....	....	....	....	....	....	....	....	....	....	....	....	36
Males	2	1	....	....	....	....	....	....	....	....	....	....	....	....	3
Females	5	1	....	....	....	....	....	....	....	....	....	....	....	....	6
Total	7	2	....	....	....	....	....	....	....	....	....	....	....	....	9

TABLE E.—

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Dentitio (Teething) ....M	10	5	5	7	5	7	8	9	8	9	3	2	78
" " ....F	8	4	8	2	6	3	11	12	8	6	2	2	72
Total	18	9	13	9	11	10	19	21	16	15	5	4	150
Hæmorrhagia umbilicalis (Umbilical Hæmorrhage)....... ....M	....	2	2	2	....	1	....	....	....	1	....	....	8
" " " F	2	1	2	1	1	1	1	....	....	1	....	....	10
Total	2	3	4	3	1	2	1	....	....	2	....	....	18
Natus præter naturam (Preternat'l Birth) M	....	....	1	....	....	....	1	2	....	....	....	....	4
" " " F	....	....	....	....	....	1	....	1	....	1	....	....	3
Total	....	....	1	....	....	1	1	3	....	1	....	....	7
Partus emortuus (Still Birth).... ....M	20	17	16	20	13	20	12	12	15	15	16	20	196
" " ....F	15	14	12	14	13	12	6	7	15	6	11	12	137
Total	35	31	28	34	26	32	18	19	30	21	27	32	333
Partus intempestivus (Premature Birth)..M	15	16	12	10	15	13	13	16	10	9	17	6	152
" " . F	9	5	17	12	9	5	15	13	6	7	6	12	116
Total	24	21	29	22	24	18	28	29	16	16	23	18	268
Spina bifida ....M	2	1	1	2	....	....	....	2	....	....	1	1	10
" ....F	1	1	....	1	....	1	....	1	....	1	....	....	6
Total	3	2	1	3	....	1	....	3	....	1	1	1	16
ORDER 2. DEVELOPMENTAL DISEASES OF WOMEN. *Gyniaci.*													
Abortus (Abortion, Miscarriage) ....F	1	....	....	2	1	....	....	....	....	....	....	2	6
Climacteria (Turn of Life) ....F	....	....	....	2	....	....	1	2	1	....	....	....	6
Eclampsia parturi (Convulsions in Childbirth)............................F	1	2	6	3	8	2	2	6	5	5	1	3	44
Febris puerperalis (Puerperal Fever) .....F	11	5	16	18	17	10	10	2	4	5	2	4	104
Hæmorrhagia post partum (Flooding) ....F	1	1	1	1	1	2	1	2	....	....	4	....	14
Mania puerperalis (Puerperal Mania).....F	....	....	....	....	....	....	2	1	....	....	....	....	3

DEATHS—*Continued.*

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	47	31	....	....	....	....	....	....	....	....	....	....	....	....	78
Females	42	29	1	....	....	....	....	....	....	....	....	....	....	....	72
Total	89	60	1	....	....	....	....	....	....	....	....	....	....	....	150
Males	8	....	....	....	....	....	....	....	....	....	....	....	....	....	8
Females	10	....	....	....	....	....	....	....	....	....	....	....	....	....	10
Total	18	....	....	....	....	....	....	....	....	....	....	....	....	....	18
Males	4	....	....	....	....	....	....	....	....	....	....	....	....	....	4
Females	3	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Total	7	....	....	....	....	....	....	....	....	....	....	....	....	....	7
Males	196	....	....	....	....	....	....	....	....	....	....	....	....	....	196
Females	137	....	....	....	....	....	....	....	....	....	....	....	....	....	137
Total	333	....	....	....	....	....	....	....	....	....	....	....	....	....	333
Males	152	....	....	....	....	....	....	....	....	....	....	....	....	....	152
Females	116	....	....	....	....	....	....	....	....	....	....	....	....	....	116
Total	268	....	....	....	....	....	....	....	....	....	....	....	....	....	268
Males	7	3	....	....	....	....	....	....	....	....	....	....	....	....	10
Females	5	1	....	....	....	....	....	....	....	....	....	....	....	....	6
Total	12	4	....	....	....	....	....	....	....	....	....	....	....	....	16
Females	....	....	....	....	2	2	1	1	....	....	....	....	....	....	6
Females	....	....	....	....	....	....	1	3	2	....	....	....	....	....	6
Females	....	....	....	....	5	25	12	....	....	....	....	....	....	2	44
Females	....	....	....	....	6	41	40	12	....	....	....	....	....	5	104
Females	....	....	....	....	....	9	3	2	....	....	....	....	....	....	14
Females	....	....	....	....	....	2	1	....	....	....	....	....	....	....	3

TABLE E.—

CAUSE OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	MONTHS.												
Partus (Child-birth) ....F	16	10	21	25	25	20	10	18	13	11	11	13	193
Phlegmasia dolens (Milk Leg)............F	....	1	1	1	....	....	....	....	1	....	....	....	4
ORDER 3. DEVELOPMENTAL DISEASES OF OLD PEOPLE. *Geratici.*													
Gangræna senilis (Senile Gangrene)......M	....	1	1	....	3	1	2	2	....	2	1	3	16
" " " " ......F	1	1	....	....	1	....	3	....	....	....	....	....	6
Total	1	2	1	....	4	1	5	2	....	2	1	3	22
Senectus (Old Age) ....M	70	68	89	81	80	66	60	60	74	75	59	72	854
" " ....F	81	87	103	87	78	62	61	68	46	61	65	78	877
Total	151	155	192	168	158	128	121	128	120	136	124	150	1731
Total Developmental Diseases ....M	119	113	130	125	118	109	96	107	108	112	100	107	1344
" " " ....F	151	135	188	175	162	122	123	137	99	106	106	128	1632
Total	270	248	318	300	280	231	219	244	207	218	206	235	2976
CLASS V. VIOLENCE TENDING TO SUDDEN DEATH. *Thanatici.*													
ORDER 1. ACCIDENT AND NEGLIGENCE.													
Ambusta (Burns and Scalds) ....M	4	....	3	2	6	1	2	1	2	3	1	4	29
" " " ....F	5	4	4	2	2	2	1	....	2	3	....	5	30
Total	9	4	7	4	8	3	3	1	4	6	1	9	59
Amputatio (Amputation)................M	1	....	1	1	....	....	....	....	....	....	....	....	3
" " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	1	....	1	1	....	....	....	....	....	....	....	....	3
Concussio (Concussion of Spine) ....M	2	....	....	2	1	....	....	1	....	....	....	....	6
" " " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	2	....	....	2	1	....	....	1	....	....	....	....	6
Contusio (Contusion)....................M	....	....	....	2	2	....	....	....	2	2	....	....	8
" " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	2	2	....	....	....	2	2	....	....	8
Explosio (Explosion)....................M	....	....	....	....	1	1	....	1	....	....	....	....	3
" " ....F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	1	1	....	1	....	....	....	....	3

DEATHS—*Continued.*

SEX.	AGE. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Females	....	....	....	....	10	81	72	25	....	....	....	....	....	5	193
Females	....	....	....	....	....	3	1	....	....	....	....	....	....	....	4
Males	....	....	....	....	....	....	....	....	....	1	6	7	1	1	16
Females	....	....	....	....	....	....	....	....	1	2	1	....	1	1	6
Total	....	....	....	....	....	....	....	....	1	3	7	7	2	2	22
Males	....	....	....	....	....	....	....	....	....	4	347	392	104	7	854
Females	....	....	....	....	....	....	....	....	....	13	365	401	90	8	877
Total	....	....	....	....	....	....	....	....	....	17	712	793	194	15	1731
Males	437	37	....	....	....	....	....	....	....	5	353	399	105	8	1344
Females	340	33	2	....	23	163	131	43	3	15	366	401	91	21	1632
Total	777	70	2	....	23	163	131	43	3	20	719	800	196	29	2976
Males	1	14	2	1	....	4	3	1	2	....	....	....	....	1	29
Females	4	16	2	....	....	....	....	4	2	1	....	1	....	....	30
Total	5	30	4	1	....	4	3	5	4	1	....	1	....	1	59
Males	....	....	....	....	1	1	....	1	....	....	....	....	....	....	3
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	1	1	....	1	....	....	....	....	....	....	3
Males	....	....	1	....	1	2	....	1	1	....	....	....	....	....	6
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	1	....	1	2	....	1	1	....	....	....	....	....	6
Males	....	....	....	....	....	....	5	1	....	2	....	....	....	....	8
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	5	1	....	2	....	....	....	....	8
Males	....	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	3	....	....	....	....	....	....	....	....	3

TABLE E.—

CAUSE OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	MONTHS.												
Fractura (Fracture) ... M	....	2	4	....	....	1	1	2	2	1	2	2	17
" " ... F	...	....	1	3	....	....	1	1	....	1	....	....	7
Total	....	2	5	3	....	1	2	3	2	2	2	2	24
Gelatio (Freezing) ... M	5	1	4	....	....	....	....	....	....	....	1	4	15
" " ... F	....	....	1	....	....	....	....	....	....	....	1	....	2
Total	5	1	5	....	....	....	....	....	....	....	2	4	17
Ictus fulminis (Lightning) ... M	....	....	....	....	1	....	....	2	1	....	....	....	4
" " ... F	....	....	....	....	....	....	....	....	....	....	....	....	...
Total	....	....	....	....	1	....	....	2	1	....	....	....	4
Suffocatio (Suffocation) ... M	1	2	2	2	1	1	....	1	1	2	1	....	14
" " ... F	....	1	1	1	....	1	....	1	1	1	1	....	8
Total	1	3	3	3	1	2	....	2	2	3	2	....	22
Submersio (Drowning) ... M	1	1	5	10	16	30	31	20	21	12	11	4	162
" " ... F	....	....	1	3	....	5	5	3	2	....	....	1	20
Total	1	1	6	13	16	35	36	23	23	12	11	5	182
Venenatio (Poison) ... M	3	2	2	....	1	1	....	....	....	....	3	2	14
" " ... F	....	....	1	1	1	1	1	....	....	1	1	2	9
Total	3	2	3	1	2	2	1	....	....	1	4	4	23
Vulnera (Wounds) ... M	22	16	18	17	18	16	21	25	15	27	22	21	238
" " ... F	5	6	2	2	2	4	3	7	4	1	2	4	42
Total	27	22	20	19	20	20	24	32	19	28	24	25	280
Killed by Cars ... M	4	8	7	7	5	9	3	4	6	12	3	5	73
" " ... F	1	1	....	....	1	....	1	1	3	1	....	....	9
Total	5	9	7	7	6	9	4	5	9	13	3	5	82
ORDER 2. HOMICIDE.													
Murder and Manslaughter ... M	2	1	....	1	....	....	....	....	1	....	....	....	5
" " ... F	....	1	....	3	....	....	....	....	....	....	....	1	5
Total	2	2	....	4	....	....	....	....	1	....	....	1	10
ORDER 3. SUICIDE—*Autophonici.*													
Submersio (Drowning) ... M	....	....	....	1	....	....	1	....	1	....	....	....	3
" " ... F	....	....	....	....	1	....	1	1	....	....	....	....	3
Total	....	....	....	1	1	....	2	1	1	....	....	....	6

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	1	2	....	1	6	3	2	1	1	....	....	....	17
Females	....	2	2	....	....	....	....	....	1	....	2	....	....	....	7
Total	....	2	3	2	....	1	6	3	3	1	3	....	....	....	24
Males	....	....	....	....	....	1	2	5	1	3	1	1	....	1	15
Females	....	....	....	....	....	....	....	....	1	....	....	....	....	1	2
Total	....	....	....	....	....	1	2	5	2	3	1	1	....	2	17
Males	....	....	....	....	....	....	2	1	1	....	....	....	....	....	4
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	2	1	1	....	....	....	....	....	4
Males	2	1	....	....	1	1	....	4	3	1	....	....	....	1	14
Females	....	2	2	....	....	....	2	....	1	....	....	1	....	....	8
Total	2	3	2	....	1	1	2	4	4	1	....	1	....	1	22
Males	1	19	17	20	19	35	16	6	11	7	3	1	....	7	162
Females	....	3	....	....	5	4	1	1	1	1	2	....	....	2	20
Total	1	22	17	20	24	39	17	7	12	8	5	1	....	9	182
Males	2	....	2	....	1	2	1	1	1	2	1	....	....	1	14
Females	2	....	....	....	1	2	1	1	....	1	....	....	....	1	9
Total	4	....	2		2	4	2	2	1	3	1	....	....	2	23
Males	2	7	11	14	20	38	28	20	27	34	19	7	1	10	238
Females	2	7	1	6	2	3	2	5	3	3	6	1	1	....	42
Total	4	14	12	20	22	41	30	25	30	37	25	8	2	10	280
Males	....	....	2	3	11	21	12	7	5	5	2	3	....	2	73
Females	....	1	....	....	1	1	1	1	1	1	2	....	....	....	9
Total	....	1	2	3	12	22	13	8	6	6	4	3	....	2	82
Males	....	....	....	....	1	....	....	2	....	1	....	....	1	....	5
Females	1	....	....	....	....	....	....	....	....	2	....	....	....	2	5
Total	1	....	....	....	1	....	....	2	....	3	....	....	1	2	10
Males	....	....	....	....	....	1	....	1	1	....	....	....	....	....	3
Females	....	....	....	....	1	1	....	1	....	....	....	....	....	....	3
Total	....	....	....	....	1	2	....	2	1	....	....	....	....	....	6

TABLE E.—

CAUSE OF DEATH.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		MONTHS.												
Suspendium (Hanging)	M	....	....	....	....	....	....	....	1	....	....	....	....	1
" "	F	....	....	....	....	....	....	....	....	....	....	....	....	....
Total		....	....	....	....	....	....	....	1	....	....	....	....	1
Venenatio (Poison)	M	....	....	....	....	1	....	2	....	....	....	1	....	4
" "	F	....	....	....	....	....	2	....	1	2	....	1	....	6
Total		....	....	....	....	1	2	2	1	2	....	2	....	10
Vulnera (Wounds)	M	....	....	1	1	2	....	1	....	2	1	5	....	13
" "	F	....	....	....	2	....	....	....	....	1	....	....	....	3
Total		....	....	1	3	2	....	1	....	3	1	5	....	16
ORDER 4. EXECUTION.														
Suspendium (Hanging)	M	1	....	1	....	....	1	....	1	....	1	....	....	5
" "	F	....	....	....	....	1	....	....	1	....	....	....	....	2
Total		1	....	1	....	1	1	....	2	....	1	....	....	7
Total Violent Deaths	M	46	33	48	46	55	61	62	59	54	61	50	42	617
" "	F	11	13	11	17	8	15	13	16	15	8	6	13	146
Total		57	46	59	63	63	76	75	75	69	69	56	55	763
Cause not Specified	M	30	30	26	35	22	29	35	24	28	24	27	20	330
" "	F	41	43	48	41	30	25	27	39	28	25	40	33	420
Total		71	73	74	76	52	54	62	63	56	49	67	53	750

DEATHS—*Continued.*

SEX.	AGES.														
	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80	80 to 90.	90 and over.	Unknown.	Total.
Males	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Females	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Males	....	....	....	....	....	....	1	1	1	....	....	....	....	1	4
Females	....	....	....	....	1	1	1	1	1	1	....	....	....	....	6
Total	....	....	....	....	1	1	2	2	2	1	....	....	....	1	10
Males	....	....	....	....	1	3	2	5	1	....	....	....	....	1	13
Females	....	....	....	....	....	....	1	1	....	....	1	....	....	....	3
Total	....	....	....	....	1	3	3	6	1	....	1	....	....	1	16
Males	....	....	....	....	....	1	....	2	1	....	1	....	....	....	5
Females	....	....	....	....	....	....	....	1	....	1	....	....	....	....	2
Total	....	....	....	....	....	1	....	3	1	1	1	....	....	....	7
Males	8	41	36	40	56	115	78	62	58	56	28	12	2	25	617
Females	9	31	7	6	11	12	9	16	11	11	13	3	1	6	146
Total	17	72	43	46	67	127	87	78	69	67	41	15	3	31	763
Males	4	20	19	14	16	40	20	22	44	58	1	....	....	72	330
Females	4	25	22	23	32	61	46	40	46	54	2	....	....	65	420
Total	8	45	41	37	48	101	66	62	90	112	3	....	....	137	750

H. S. CREWE,

Inspector.

TABLE E.—DEATHS BY

CAUSE OF DEATH.	MONTHS.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
CLASS I.													
Total Zymotic Diseases—Males	162	138	177	166	114	127	224	264	229	125	126	127	1979
Females	157	98	164	176	125	118	166	212	190	116	112	124	1758
Total	319	236	341	342	239	245	390	476	419	241	238	251	3737
CLASS II.													
Total Constitutional Diseases—Males	221	229	231	265	238	206	237	234	231	203	219	201	2715
Females	213	218	298	286	245	223	229	243	225	232	191	193	2796
Total	434	447	529	551	483	429	466	477	456	435	410	394	5511
CLASS III.													
Total Local Diseases—Males	371	339	463	367	415	306	270	284	267	288	284	314	3968
Females	296	303	366	352	326	264	239	240	238	217	237	266	3344
Total	667	642	829	719	741	570	509	524	505	505	521	580	7312
CLASS IV.													
Total Developmental Deaths—Males	119	113	130	125	118	109	96	107	108	112	100	107	1344
Females	151	135	188	175	162	122	123	137	99	106	106	128	1632
Total	270	248	318	300	280	231	219	244	207	218	206	235	2976
CLASS V.													
Total Violent Deaths—Males	46	33	48	46	55	61	62	59	54	61	50	42	617
Females	11	13	11	17	8	15	13	16	15	8	6	13	146
Total	57	46	59	63	63	76	75	75	69	69	56	55	763
Total Deaths from Other Causes and Cause not specified—Males	30	30	26	35	22	29	35	24	28	24	27	20	330
Females	41	43	48	41	30	25	27	39	28	25	40	33	420
Total	71	73	74	76	52	54	62	63	56	49	67	53	750
Total—Males	949	882	1075	1004	962	838	924	972	917	813	806	811	10953
Females	869	810	1075	1047	896	767	797	887	795	704	692	757	10096
Grand Total	1818	1692	2150	2051	1858	1605	1721	1859	1712	1517	1498	1568	21049

CLASSES.—RECAPITULATION.

SEX.	AGES. Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 and over.	Unknown.	Total.
Males	591	550	223	104	74	105	62	51	47	49	50	13	4	56	1979
Females	485	481	234	100	67	121	87	46	29	40	21	16	....	31	1758
Total	1076	1031	457	204	141	226	149	97	76	89	71	29	4	87	3737
Males	913	163	41	27	77	396	263	208	165	206	145	56	2	53	2715
Females	710	130	38	70	189	517	334	225	174	178	124	36	3	68	2796
Total	1623	293	79	97	266	913	597	433	339	384	269	92	5	121	5511
Males	806	370	91	86	134	278	230	282	386	502	473	185	10	135	3968
Females	575	334	112	95	133	297	259	254	320	383	327	133	5	117	3344
Total	1381	704	203	181	267	575	489	536	706	885	800	318	15	252	7312
Males	437	37	....	....	....	....	....	....	....	5	353	399	105	8	1344
Females	340	33	2	....	23	163	131	43	3	15	366	401	91	21	1632
Total	777	70	2	....	23	163	131	43	3	20	719	800	196	29	2976
Males	8	41	36	40	56	115	78	62	58	56	28	12	2	25	617
Females	9	31	7	6	11	12	9	16	11	11	13	3	1	6	146
Total	17	72	43	46	67	127	87	78	69	67	41	15	3	31	763
Males	4	20	19	14	16	40	20	22	44	58	1	....	....	72	330
Females	4	25	22	23	32	61	46	40	46	54	2	....	....	65	420
Total	8	45	41	37	48	101	66	62	90	112	3	....	....	137	750
Males	2759	1181	410	271	357	934	653	625	700	876	1050	665	123	349	10953
Females	2123	1034	415	294	455	1171	866	624	583	681	853	589	100	308	10096
Grand Total	4882	2215	825	565	812	2105	1519	1249	1283	1557	1903	1254	223	657	21049

H. S. CREWE,
Inspector.

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—ZYMOTIC										
	ORDER 1.—MIASMATIC										
	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Algoma:											
Males	......	......	......	......	......	......	......	3	......	......	......
Females	......	......	......	2	1	......	......	5	......	......	......
Total	......	......	......	2	1	......	......	8	......	......	......
Brant:											
Males	1	4	......	6	1	......	1	14	2	1	......
Females	......	1	......	......	2	......	......	15	1	......	......
Total	1	5	.	6	3	......	1	29	3	1	......
Bruce:											
Males	......	1	1	6	4	......	1	5	3	......	......
Females	......	......	......	1	2	1	......	8	1	......	......
Total	......	1	1	7	6	1	1	13	4	......	......
Carleton:											
Males	......	27	......	4	41	......	4	23	7	......	......
Females	......	24	1	7	44	......	3	23	....	......	1
Total	......	51	1	11	85	....	7	46	7	......	1
Dufferin:											
Males	......	1	......	1	......	......	......	1	......	......	......
Females	......	......	......	3	......	......	......	......	......	......	1
Total	......	1	......	4	......	......	......	1	......	......	1
Elgin:											
Males	......	6	......	2	2	......	2	2	1	......	......
Females	......	1	......	2	6	......	......	3	2	......	......
Total	......	7	......	4	8	......	2	5	3	......	......
Essex:											
Males	......	7	3	5	9	......	......	14	2	......	....
Females	......	2	......	3	5	......	2	17	......	......	......
Total	......	9	3	8	14	......	2	31	2	......	......
Frontenac:											
Males	......	1	......	5	6	......	2	3	1	......	......
Females	......	4	......	5	2	......	......	2	......	....	......
Total	......	5	......	10	8	......	2	5	1	......	......

CAUSES OF DEATHS, 1883.

DISEASES, *Zymotici.*

Diseases, *Miasmatici.*														Order 2.—Enthetic or Inoculated Diseases, *Enthetici.*
Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
1	......	......	......	1	......	......	......	......	......	......	3	......	3	......
2	......	......	......	2	......	......	......	......	......	1	2	......	......	......
3	......	......	......	3	......	......	......	......	......	1	5	......	3	......
1	......	......	1	9	......	......	......	......	1	4	2	......	......	......
1	......	......	......	8	......	......	1	......	1	2	......	1	......	......
2	......	......	1	17	......	......	1	......	2	6	2	1	......	......
2	......	......	......	4	......	1	1	1	......	1	5	......	......	......
......	......	......	......	4	......	1	......	......	......	3	5	......	......	......
2	......	......	......	8	......	2	1	1	......	4	10	......	......	......
......	......	3	1	13	......	4	......	......	5	......	28	......	......	......
......	......	1	......	14	......	3	......	......	4	2	17	......	......	......
......	......	4	1	27	......	7	......	......	9	2	45	......	......	......
......	......	......	......	2	......	......	1	......	1	......	1	......	......	......
......	......	......	......	2	......	......	2	......	1	......	1	......	......	......
......	......	......	......	4	......	......	3	......	2	......	2	......	......	......
2	......	......	......	5	......	1	1	......	......	......	......	......	......	......
......	1	1	......	4	......	......	1	......	1	......	1	......	......	......
2	1	1	......	9	......	1	2	......	1	......	1	......	......	......
2	......	......	1	5	......	......	......	......	2	......	7	......	......	......
2	1	1	......	10	......	1	3	......	2	3	6	......	......	......
4	1	1	1	15	......	1	3	......	4	3	13	......	......	......
......	1	......	......	6	......	2	6	......	3	4	1	1	......	......
......	......	1	......	5	......	5	8	......	5	2	2	1	......	1
......	1	1	......	11	......	7	14	......	8	6	3	2	......	1

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARASITIC DISEASES.—*Paraciti*ci.			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets.)	Apthæ (Thrush).	Tænia Solum (Tape-Worm).	Vermes (Worms).	Total Zymotic Diseases.
Algoma:											
Males			1	4				1			17
Females											15
Total			1	4				1			32
Brant:											
Males											48
Females											33
Total											81
Bruce:											
Males	1									1	38
Females						1					27
Total	1					1				1	65
Carleton:											
Males		1		2				4			167
Females											144
Total		1		2				4			311
Dufferin:											
Males											8
Females						1					11
Total						1					19
Elgin:											
Males				1							25
Females											23
Total				1							48
Essex:											
Males				1						1	59
Females											58
Total				1						1	117
Frontenac:											
Males	1										43
Females											43
Total	1										86

CAUSES OF DEATHS, 1883—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

Order 1.—Diathetic Diseases.—*Diathetici.*											Order 2.—Tubercular Disease.—*Phthisici.*		
Anæmia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythæmia.	Mortificacio (Mortification).	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
11	......	......	1	......	......	1	......	......	......	......	3	......	......
5	2	......	......	......	......	......	......	......	......	......	......	......	......
16	2	......	1	......	......	1	......	......	......	......	3	......	......
9	3	......	......	3	......	......	......	......	......	1	1	2	......
4	4	......	......	8	......	......	......	......	......	1	3	......	......
13	7	......	......	11	......	......	......	......	......	2	4	2	......
34	5	......	1	7	......	......	......	......	......	3	2	......	......
31	10	......	1	9	......	......	......	......	......	2	2	......	......
65	15	......	2	16	......	......	......	......	......	5	4	......	......
98	10	......	......	10	......	1	......	......	......	3	43	......	......
69	11	......	2	16	......	......	......	......	......	2	28	......	2
167	21	......	2	26	......	1	......	......	......	5	71	......	2
9	......	......	2	......	......	......	......	......	......	......	1	......	......
11	3	......	......	2	......	......	......	......	......	......	1	......	......
20	3	......	2	2	......	......	......	......	......	......	2	......	......
8	1	......	......	3	......	1	......	......	......	......	......	......	1
9	5	......	......	1	......	......	......	......	......	1	1	......	......
17	6	......	......	4	......	1	......	......	......	1	1	......	1
37	4	......	......	3	......	......	......	......	......	......	1	1	......
30	4	......	......	4	......	2	......	......	......	......	1	1	......
67	8	......	......	7	......	2	......	......	......	......	2	2	......
27	7	......	1	10	......	3	......	......	......	5	2	1	......
14	7	......	2	3	......	......	......	......	......	1	1	......	......
41	14	......	3	13	......	3	......	......	......	6	3	1	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS II.—*Continued.* Order 2—*Continued.* Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	CLASS III.—LOCAL. Order 1.—Diseases of the Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Algoma:												
Males	3	.....	1	20	.....	.....	.....	3	2	2	.....	....
Females	4	.....	.....	11	1	.....	.....	3	.....	.....	.....	....
Total	7	.....	1	31	1	.....	.....	6	2	2	.....	....
Brant:												
Males	18	.....	.....	37	9	.....	.....	5	1	1	.....	....
Females	25	1	1	47	5	.....	.....	1	.....	.....	.....	....
Total	43	1	1	84	14	.....	.....	6	1	1	.....	....
Bruce:												
Males	20	.....	.....	72	7	.....	.....	5	2	1	.....	....
Females	25	1	.....	81	1	.....	.....	4	2	.....	.....	....
Total	45	1	.....	153	8	.....	.....	9	4	1	.....	....
Carleton:												
Males	72	20	.....	257	11	.....	.....	12	15	1	.....	....
Females	76	21	.....	227	8	.....	1	10	7	1	.....	....
Total	148	41	.....	484	19	.....	1	22	22	2	.....	....
Dufferin:												
Males	14	.....	.....	26	.....	.....	.....	3	.....	.....	.....	....
Females	11	.....	.....	28	1	.....	.....	1	2	.....	.....	....
Total	25	.....	.....	54	1	.....	.....	4	2	.....	.....	....
Elgin:												
Males	16	.....	.....	30	5	.....	.....	3	.....	1	.....	....
Females	25	.....	.....	42	4	.....	.....	4	.....	.....	.....	....
Total	41	.....	.....	72	9	.....	.....	7	.....	1	.....	....
Essex:												
Males	38	1	1	86	9	2	.....	11	1	.....	.....	....
Females	45	.....	1	88	1	.....	.....	8	3	.....	.....	....
Total	83	1	2	174	10	2	.....	19	4	.....	.....	....
Frontenac:												
Males	42	2	.....	100	4	1	1	5	.....	2	1	....
Females	55	.....	.....	83	6	.....	.....	7	.....	.....	.....	....
Total	97	2	.....	183	10	1	1	12	.....	2	1	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditus (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditus (Inflammation of Membrane lining Heart.)	Epistaxes (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
....	....	3	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
....	....	5	1	....	6	....	2	....	....	....	....	....	....	....	....	....	1
....	....	6	....	1	4	....	....	....	....	....	....	....	....	....	....	....	....
....	....	11	1	1	10	....	2	....	....	....	....	....	....	....	....	....	1
1	....	11	2	3	5	....	....	....	....	....	....	....	....	....	....	....	....
....	....	7	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....
1	....	18	3	3	7	....	....	....	....	....	....	....	....	....	....	....	....
....	....	21	....	....	11	....	....	1	....	....	....	....	....	....	1	....	....
2	....	12	1	....	13	....	....	2	....	....	....	....	....	....	....	....	1
2	....	33	1	....	24	....	....	3	....	....	....	....	....	....	1	....	1
....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....
....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....
....	....	1	2	....	1	....	....	....	....	....	....	....	....	....	1	....	....
....	....	4	1	1	9	....	....	....	....	....	....	....	1	....	....	1	....
....	....	3	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
....	....	7	1	1	11	....	....	....	....	....	....	....	1	....	....	1	....
1	1	6	1	....	1	....	....	....	....	....	1	....	....	....	....	2	1
....	....	7	1	1	4	....	....	....	....	1	....	....	....	....	....	....	....
1	1	13	2	1	5	....	....	....	....	1	1	....	....	....	....	2	1
2	1	7	2	....	7	....	....	....	....	....	....	....	....	....	....	....	....
....	....	4	1	2	6	....	....	....	....	....	....	....	1	....	....	....	....
2	1	11	3	2	13	....	....	....	....	....	....	....	1	....	....	....	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III. Order 2—*Continued.* Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Order 3.—Diseases of the Respiratory Sys- Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest.)	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Algoma:												
Males	4	...	...	...	...	3	1	...	...	...	1	1
Females	3	...	...	...	...	...	1	...	...	...	...	...
Total	7	...	...	...	...	3	2	...	...	...	1	1
Brant:												
Males	10	...	...	...	...	1	3	...	...	...	...	...
Females	11	...	...	...	...	2	5	...	...	...	...	...
Total	21	...	...	...	...	3	8	...	...	...	...	...
Bruce:												
Males	7	...	...	...	...	6	6	...	...	...	1	...
Females	12	...	...	...	...	1	4	...	...	...	...	...
Total	19	...	...	...	...	7	10	...	...	...	1	...
Carleton:												
Males	21	1	...	...	...	4	10	2	...	...	2	5
Females	31	...	...	...	...	7	10	...	...	...	2	3
Total	52	1	...	...	...	11	20	2	...	...	4	8
Dufferin:												
Males	2	...	...	...	...	2	...	...	...	...	...	1
Females	3	...	...	...	...	1	1	...	...	...	...	...
Total	5	...	...	...	...	3	1	...	...	...	...	1
Elgin:												
Males	5	...	...	...	...	5	3	1	...	...	...	1
Females	7	...	...	...	...	4	4	...	...	...	...	...
Total	12	...	...	...	...	9	7	1	...	...	...	1
Essex:												
Males	9	...	...	...	...	3	4	...	...	...	...	2
Females	15	...	...	...	...	4	3	...	...	...	...	...
Total	24	...	...	...	...	7	7	...	...	...	...	2
Frontenac:												
Males	20	...	...	...	...	12	7	...	...	...	1	...
Females	9	...	...	...	...	9	10	...	...	...	...	...
Total	29	...	...	...	...	21	17	...	...	...	1	...

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleura-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	7	......	....	....	....	....	....	3	......	1	.....	......	1	......	......	......
......	4	.....	....	....	....	....	....	.....	......	......	......	......	1	......	......	......
......	11	......	....	....	....	....	....	3	......	1	......	......	2	......	......	......
......	18	.....	....	....	....	1	1	9	......	3	......	.....	1	3	1	1
......	8	......	....	1	....	....	....	5	......	3	......	......	2	......	......	......
.... .	26	......	....	1	....	1	1	14	......	6	......	......	3	3	1	1
.....	11	......	....	....	....	1	1	6	......	1	1	......	1	1	......	......
......	10	......	....	....	....	....	1	5	......	......	1	......	1	......	1	1
......	21	......	....	....	....	1	2	11	......	1	2	......	2	1	1	1
......	28	......	....	....	....	1	....	15	......	3	......	......	2	......	3	......
......	25	......	....	....	1	1	2	22	......	......	......	......	1	......	1	......
......	53	......	....	....	1	2	2	37	......	3	......	......	3	......	4	......
......	6	......	....	....	....	....	....	1	......	......	......	......	2	1	......	......
......	3	......	....	....	....	....	....	3	......	......	......	......	......	......	......	......
......	9	......	....	....	....	....	....	4	... ..	......	......	......	2	1	......	......
......	14	......	....	....	....	....	2	2	......	......	......	......	1	......	......	......
......	16	......	....	....	....	....	....	2	......	......	......	......	1	......	1	......
......	30	.....	....	....	....	....	2	4	......	......	......	......	2	......	1	......
......	21	......	....	....	1	....	1	5	......	......	......	......	3	......	......	......
......	14	......	....	....	....	....	....	4	......	1	......	......	2	......	1	......
......	35	......	....	....	1	....	1	9	......	1	......	.....	5	......	1	......
......	15	......	....	1	....	....	1	4	......	1	......	.....	1	1	......	......
......	11	......	....	....	....	....	....	8	......	3	......	......	2	......	1	......
......	26	......	....	1	....	....	1	12	......	4	......	......	3	1	1	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.— Order 4—*Continued.* Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestina (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Algoma :										
Males									1	
Females										
Total									1	
Brant :										
Males								2		
Females				1					1	
Total				1				2	1	
Bruce :										
Males				1						
Females				2						
Total				3						
Carleton :										
Males	1			2						
Females				2						
Total	1			4						
Dufferin :										
Males				1						1
Females										
Total				1						1
Elgin :										
Males				1						3
Females										2
Total				1						5
Essex :										
Males	2									
Females	1			1						2
Total	3			1						2
Frontenac :										
Males										
Females	1			2						1
Total	1			2						1

CAUSES OF DEATHS, 1883.—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*									Order 6.—Diseases of the Generative Organs.—*Genetici.*						
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	2	2	1	1	.....	2	3	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	2	3	.....	.....	.....	.....	1	.....	.....	.....
1	2	2	1	1	.....	4	6	.....	.....	.....	.....	1	.....	.....	.....
2	2	.....	.....	.....	.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
2	2	.....	.....	.....	.....	1	4	.....	.....	.....	.....	.....	.....	1	.....
.....	3	2	1	.....	.....	2	5	.....	1	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	3	2	1	1	.....	2	6	.....	1	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	3	.....	.....	.....	.....	2	.....	.....	.....	.....
1	5	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1	.....	.....	.....
1	5	1	.....	.....	.....	1	2	.....	.....	.....	.....	1	.....	.....	.....
1	2	1	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	2	3	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	.....	.....	6	4	1	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....
.....	1	.....	.....	.....	.....	6	4	1	.....	.....	2	1	.....	.....	.....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.—*Continued.*										
	ORDER 7.—DISEASES OF THE LOCOMOTIVE SYSTEM.—*Myostici.*							ORDER 8.—DISEASES OF THE INTEGUMENTARY SYSTEM.—*Chrotici.*			
	Arthritis (Inflammation of Joints.	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Algoma :											
Males											35
Females											15
Total											50
Brant :											
Males								1			97
Females											63
Tota								1			160
Bruce :											
Males								1		1	92
Females								2			59
Total								3		1	151
Carleton :											
Males			1			1		4			193
Females								1			169
Total			1			1		5			362
Dufferin :											
Males			1	1				1			28
Females											21
Total			1	1				1			49
Elgin :											
Males								3			75
Females											53
Total								3			128
Essex :											
Males											95
Females								1			77
Total								1			172
Frontenac :											
Males							1	1			111
Females								2			89
Total							1	3			200

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Hæmorrhage Umbilicalis (Umbilical Hæmorrhage).	Natus Præter Naturam (Preternatural Birth).	Partus Emortuus (Still Birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life.	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	1	.....	1	1	.....	.....	1	.....	.....	.....	.....	.....	3	.....
.....	.....	.....	1	.....	1	2	.....	.....	1	.....	.....	.....	.....	.....	3	.....
1	.....	.....	.....	.....	.....	.....	4	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1	.....	.....	3	.....	.....	.....	.....	1	.....	.....	3	.....
1	.....	.....	.....	1	.....	.....	7	1	.....	.....	.....	1	.....	.....	3	.....
1	1	.....	1	.....	.....	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	1	.....	1	1	.....	4	2	1	.....	.....	.....	.....	.....	.....	5	.....
3	2	.....	2	1	.....	10	3	1	.....	.....	.....	.....	.....	.....	5	.....
.....	7	.....	33	1	.....	12	9	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	5	.....	37	3	.....	15	14	.....	.....	.....	.....	2	1	.....	13	.....
.....	12	.....	70	4	.....	27	23	.....	.....	.....	.....	2	1	.....	13	.....
.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	1	3	.....	.....	3	.....
.....	1	.....	.....	1	.....	3	.....	.....	.....	.....	1	3	.....	.....	3	.....
.....	.....	.....	1	.....	.....	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	1	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	6	.....
.....	1	.....	2	.....	.....	5	2	.....	.....	.....	2	.....	.....	.....	6	.....
.....	.....	.....	2	.....	.....	5	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	3	.....	.....	3	5	.....	.....	.....	3	2	.....	.....	9	1
.....	1	.....	5	.....	.....	8	11	.....	.....	.....	3	2	.....	.....	9	1
.....	.....	.....	5	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	4	.....	.....	6	1	.....	.....	.....	3	.....	.....	.....	7	.....
.....	.....	.....	9	.....	.....	8	2	.....	.....	.....	3	.....	.....	.....	7	.....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.* Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	CLASS V.—VIOLENCE TENDING. Order 1.—Accident. Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Algoma:											
Males	......	......	1	1	......	......	......	......	......	......	......
Females	......	......	7	1	......	......	......	......	......	......	......
Total	......	......	8	2	......	......	......	......	......	......	......
Brant:											
Males	......	14	20	......	......	......	......	......	......	1	......
Females	......	12	20	......	......	......	......	......	......	......	......
Total	......	26	40	......	......	......	......	......	......	1	......
Bruce:											
Males	......	23	33	4	......	1	......	......	......	......	......
Females	......	25	42	......	......	......	......	......	1	......	......
Total	......	48	75	4	......	1	......	......	1	......	......
Carleton:											
Males	......	41	103	......	......	1	......	......	......	1	......
Females	......	39	129	2	......	......	......	......	......	......	......
Total	......	80	232	2	......	1	......	......	......	1	......
Dufferin:											
Males	......	11	13	1	......	......	......	......	......	1	2
Females	......	7	17	......	......	......	......	......	......	......	......
Total	......	18	30	1	......	......	......	......	......	1	2
Elgin:											
Males	......	11	18	......	......	......	......	1	......	2	......
Females	......	22	33	......	......	......	......	......	......	......	......
Total	......	33	51	......	......	......	......	1	......	2	......
Essex:											
Males	......	26	39	......	1	......	......	1	......	......	......
Females	......	26	53	1	......	......	......	......	......	......	......
Total	......	52	92	1	1	......	......	1	......	......	......
Frontenac:											
Males	......	35	43	......	......	......	......	......	......	......	......
Females	......	39	60	......	......	......	......	......	......	......	......
Total	......	74	103	......	......	......	......	......	......	......	......

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*													
AND NEGLIGENCE.					ORDER 2. HOMICIDE	ORDER 3.—SUICIDE.—*Autophonici.*				ORDER 4. EXECUT'N.			
						Suicide.							
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total Number of Deaths.
......	6	......	2	......	....	......	......	......	......	....	9	1	83
......	1	......	......	......	....	......	......	......	......	....	2	2	52
......	7	......	2	......	....	......	......	......	......	....	11	3	135
......	3	......	3	1	....	......	......	......	......	....	8	4	214
......	......	......	1	......	....	......	......	......	......	....	1	4	168
......	3	......	4	1	....	......	......	......	......	....	9	8	382
......	4	......	7	......	....	......	......	......	......	....	16	5	255
......	2	......	3	1	....	......	......	......	......	....	7	7	224
......	6	......	10	1	....	......	......	......	......	....	23	12	479
......	10	......	17	1	....	......	......	......	......	....	30	20	770
......	2	......	4	......	1	......	......	......	......	....	9	31	709
......	12	......	21	1	1	......	......	......	......	....	39	51	1479
......	......	......	5	......	....	......	......	......	......	....	9	8	92
......	......	......	......	......	....	......	......	......	......	....	......	5	82
......	......	......	5	......	....	......	......	......	......	....	9	13	174
......	5	......	3	6	....	......	......	......	......	....	17	6	171
......	2	......	......	4	....	......	......	......	......	....	6	3	159
......	7	......	3	10	....	......	......	......	......	....	23	9	330
......	6	1	6	6	1	1	......	......	......	....	23	1	303
......	......	......	......	......	....	......	......	......	......	....	1	7	284
......	6	1	6	6	1	1	......	......	......	....	24	8	587
......	2	......	15	4	....	......	......	......	1	....	22	41	360
1	1	......	1	......	1	......	......	1	......	....	5	34	314
1	3	......	16	4	1	......	......	1	1	....	27	75	674

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—ZYMOTIC										
	ORDER 1.—MIASMATIC										
	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Grey:											
Males	......	......	1	1	2	......	1	7	......	......	1
Females	......	4	......	3	1	......	......	6	......	......	......
Total	......	4	1	4	3	......	1	13	......	......	1
Haldimand:											
Males	......	......	......	......	1	1	......	2	1	......	......
Females	......	......	......	2	2	......	......	4	1	......	......
Total	......	......	......	2	3	1	......	6	2	......	......
Halton:											
Males	......	2	......	2	......	1	1	3	2	......	......
Females	......	......	......	3	2	......	1	4	2	......	......
Total	......	2	......	5	2	1	2	7	4	......	......
Hastings:											
Males	......	1	1	3	7	......	......	6	......	......	1
Females	......	3	......	1	5	......	......	10	......	......	......
Total	......	4	......	4	12	......	......	16	......	......	1
Huron:											
Males	1	2	......	1	7	......	3	22	3	......	......
Females	......	2	1	3	1	......	3	11	......	......	1
Total	1	4	1	4	8	......	6	33	3	......	1
Kent:											
Males	......	4	......	1	7	......	1	7	1	......	1
Females	......	5	1	4	8	......	2	1	2	......	3
Total	......	9	1	5	15	......	3	8	3	......	4
Lambton:											
Males	......	4	......	4	......	......	3	3	2	......	......
Females	......	4	......	6	3	......	1	8	1	......	......
Total	......	8	......	10	3	......	4	11	3	......	......
Lanark:											
Males	......	1	1	2	1	......	......	10	1	......	......
Females	......	2	1	1	2	1	......	10	3	......	......
Total	......	3	2	3	3	1	......	20	4	......	......

CAUSES OF DEATH, 1883.

DISEASES, *Zymotici.*

DISEASES, *Miasmatici.*														ORDER 2.—ENTHETIC OR INOCULATED DISEASE, *Enthetici.*
Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever.)	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough.)	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
1	1	......	......	4	......	2	......	......	2	4	14	......	......	....
1	1	......	......	3	......	......	2	......	......	......	19	......	......	....
2	2	......	......	7	......	2	2	......	2	4	33	......	......	....
......	......	......	......	2	......	......	......	......	......	......	1	......	......	....
5	......	......	......	......	......	1	......	......	......	1	3	......	......	....
5	......	......	......	2	......	1	......	......	......	......	4	......	......	....
......	......	......	......	7	......	......	......	......	......	1	3	......	......	....
......	......	......	......	2	......	......	......	......	......	3	2	......	......	....
......	......	......	......	9	......	......	......	......	......	4	5	......	......	....
1	......	......	......	7	......	2	4	......	2	......	8	......	......	....
4	......	......	1	......	......	2	2	1	3	1	11	1	......	....
5	......	......	1	7	......	4	6	1	5	1	19	1	......	....
6	......	......	......	8	......	1	......	......	1	3	7	......	......	....
1	......	1	......	6	......	2	1	......	1	......	3	......	......	....
7	......	1	......	14	......	3	1	......	2	3	10	......	......	....
1	......	......	......	8	......	3	8	......	1	......	......	......	......	....
1	......	1	......	10	......	2	8	......	......	1	1	......	......	....
2	......	1	......	18	......	5	16	......	1	1	1	......	......	....
1	......	......	......	5	......	......	......	2	2	2	......	......	......	....
1	1	......	......	7	......	......	1	......	3	4	2	......	......	....
2	1	......	......	12	......	......	1	2	5	6	2	......	......	....
1	......	......	......	2	......	......	......	......	......	1	......	......	......	....
......	......	......	......	4	......	......	......	......	......	......	1	......	......	....
1	......	......	......	6	......	......	......	......	......	1	1	......	......	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARASITIC DISEASES.—*Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets).	Apthæ (Thrush).	Tænia Solum (Tape-worm).	Vermes (Worms).	Total Zymotic Diseases.
Grey:											
Males				1							42
Females											40
Total				1							82
Haldimand:											
Males											8
Females											19
Total											27
Halton:											
Males				1							23
Females											19
Total				1							42
Hastings:											
Males								2		1	46
Females										1	46
Total								2		2	92
Huron:											
Males											65
Females										1	38
Total										1	103
Kent:											
Males										1	44
Females											50
Total										1	94
Lambton:											
Males											28
Females											42
Total											70
	1										21
											25
Total	1										46

CAUSES OF DEATHS, 1883.—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

Order 1.—Diathetic Diseases.—*Diathetici.*											Order 2.—Tubercular Disease.—*Phthisici.*		
Anaemia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer.	Leucocythaemia.	Mortificacio (Mortification).	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
19	5	......	5	2	......	......	......	......	......	2	2	1	......
8	5	......	......	3	1	......	......	......	......	1	......	......	......
27	10	......	5	5	1	......	......	......	......	3	2	1	......
6	4	......	......	2	......	......	......	......	......	......	......	......	......
......	2	......	......	1	1	......	......	......	......	1	1	1	......
6	6	......	......	3	1	......	......	......	......	1	1	1	......
2	1	......	1	2	......	......	......	......	......	......	......	2	......
4	1	......	1	3	......	......	......	......	......	1	......	......	......
6	2	......	2	5	......	......	......	......	......	1	......	2	......
18	7	......	......	2	......	1	......	......	......	6	2	......	......
18	6	......	2	2	......	......	......	......	......	1	1	......	......
36	13	......	2	4	......	1	......	......	......	7	3	......	......
25	4	......	3	10	......	......	......	......	......	1	2	1	......
15	8	......	2	13	1	2	......	......	......	2	1	......	......
40	12	......	5	23	1	2	......	......	......	3	3	1	......
27	4	......	1	4	......	......	......	......	......	......	......	2	......
22	1	......	1	4	......	......	1	......	......	4	1	......	1
49	5	......	2	8	......	......	1	......	......	4	1	2	1
21	3	......	1	1	......	......	......	......	......	......	3	1	......
11	3	......	......	3	......	......	1	......	......	......	1	1	......
32	6	......	1	4	......	......	1	......	......	......	4	2	......
11	4	......	......	3	......	......	......	......	......	1	......	......	......
14	5	......	1	2	......	......	......	......	......	......	3	2	......
25	9	......	1	5	......	......	......	......	......	1	3	2	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS II.—*Continued.* Order 2—*Continued.* Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	CLASS III.—LOCAL. Order 1.—Diseases of the Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Grey:												
Males	15	......	......	51	2	......	......	4	4	......	......	....
Females	19	......	......	37	2	......	......	5	2	1	......	1
Total	34	......	......	88	4	......	......	9	6	1	......	1
Haldimand:												
Males	16	......	......	28	......	......	......	4	......	......	......	....
Females	18	......	......	25	2	......	......	6	......	......	......	....
Total	34	......	......	53	2	......	......	10	......	......	......	....
Halton:												
Males	10	......	......	18	2	......	......	5	2	......	......	....
Females	13	......	......	23	5	......	......	2	1	1	......	....
Total	23	......	......	41	7	......	......	7	3	1	......	....
Hastings:												
Males	38	......	......	74	9	......	......	3	......	1	......	....
Females	65	......	......	95	7	......	1	1	3	......	......	....
Total	103	......	......	169	16	......	1	4	3	1	......	....
Huron:												
Males	33	2	......	81	7	......	......	7	1	......	......	....
Females	43	......	......	87	9	......	......	6	1	1	......	....
Total	76	2	......	168	16	......	......	13	2	1	......	....
Kent:												
Males	26	......	......	64	5	......	......	10	1	......	......	....
Females	32	......	......	67	4	......	......	5	......	......	......	....
Total	58	......	......	131	9	......	......	15	1	......	......	....
Lambton:												
Males	24	......	......	54	10	......	......	9	2	2	......	....
Females	28	......	......	48	7	......	......	5	2	2	......	....
Total	52	......	......	102	17	......	......	14	4	4	......	....
Lanark:												
Males	19	......	......	38	7	......	......	1	1	......	......	....
Females	27	......	......	54	2	......	......	2	2	......	......	....
Total	46	......	......	92	9	......	......	3	3	......	......	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

NERVOUS SYSTEM.—*Cephalici.*									ORDER 2.—DISEASES OF THE CIRCULATORY SYSTEM.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane Lining Heart).	Epistaxes (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
1	....	3	1	1	3	....	....	....	....	....	....	....	....	....	....	....	....
....	....	2	....	....	5	2	....	1	....	....	....	1	....	1	....	....	....
1	....	5	1	1	8	2	....	1	....	....	....	1	....	1	....	....	....
....	....	2	....	2	2	....	....	....	....	....	....	....	....	....	....	....	....
....	....	1	1	....	4	....	....	....	....	....	....	....	....	....	....	1	....
....	....	3	1	2	6	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	1	1	1	1	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	1	3	1	1	....	....	....	....	....	....	....	....	1	....
....	....	8	2	2	6	....	....	....	....	....	....	....	....	....	....	....	....
1	....	3	2	....	6	....	....	....	....	....	....	....	....	....	....	....	....
1	....	11	4	2	12	....	....	....	....	....	....	....	....	....	....	....	....
2	....	....	2	....	15	....	....	....	....	....	....	....	....	....	....	....	....
....	....	3	1	1	6	....	....	....	....	....	....	....	....	1	....	1	....
2	....	3	3	1	21	....	....	....	....	....	....	....	....	1	....	1	....
....	....	2	1	....	7	....	....	....	....	....	....	....	....	....	....	....	....
....	....	6	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
....	....	8	1	....	9	....	....	....	....	....	....	....	....	....	....	....	....
....	....	3	1	1	5	....	....	....	....	....	....	....	....	....	....	....	....
....	....	6	....	....	6	....	....	....	....	....	....	....	....	....	....	....	....
....	....	9	1	1	11	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	1	3	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	1	5	....	....	....	....	....	....	....	....	....	....	1	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.											
	ORDER 2—*Continued.*					ORDER 3.—DISEASES OF THE RESPIRATORY SYS-						
	Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Grey:												
Males	4	......	......	......	......	4	9	......	......	......	......	....
Females	5	......	......	......	......	8	5	......	......	......	1	1
Total	9	......	......	......	......	12	14	......	......	......	1	1
Haldimand:												
Males	5	......	......	......	......	3	2	......	......	......	......	1
Females	14	......	......	......	......	1	......	......	......	......	1	2
Total	19	......	......	......	......	4	2	......	......	......	1	3
Halton:												
Males	9	......	......	......	......	1	2	......	......	......	......	....
Females	3	......	1	......	......	1	2	......	......	......	......	....
Total	12	......	1	......	......	2	4	......	......	......	......	....
Hastings:												
Males	18	......	......	......	......	8	1	......	......	......	......	....
Females	7	......	......	......	......	7	7	......	......	......	......	1
Total	25	......	......	......	......	15	8	......	......	......	......	1
Huron:												
Males	14	......	......	......	......	6	4	......	......	1	1	....
Females	24	......	......	......	......	8	4	......	......	......	1	....
Total	38	......	......	......	......	14	8	......	......	1	2	....
Kent:												
Males	14	......	......	......	......	2	1	......	......	......	......	....
Females	10	......	......	......	......	2	7	......	......	......	......	....
Total	24	......	......	......	......	4	8	......	......	......	......	....
Lambton:												
Males	12	......	......	......	......	3	1	......	......	......	......	....
Females	8	......	......	......	......	1	4	......	......	......	1	....
Tota	20	......	......	......	......	4	5	......	......	......	1	....
Lanark:												
Males	4	......	......	......	......	1	3	......	......	......	......	1
Females	4	......	......	......	......	......	......	......	......	......	......	....
Total	8	......	......	......	......	1	3	......	......	......	......	1

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleuro-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	13	......	....	....	....	....	1	5	......	2	......	1	3	1	3	......
......	25	......	....	....	....	....	....	1	......	1	......	......	3	......	1	......
......	38	......	....	...	....	....	1	6	......	3	......	1	6	1	4	......
......	8	......	....	....	....	....	....	2	.... .	1	......	......	......	......	......	......
......	1	......	....	....	....	....	....	1	......	1	......	......	......	......	......	......
.....	9	......	....	-	....	....	....	3	......	2	......	......	......	......	......	......
......	6	......	....	....	....	....	1	1	......	2	......	......	......	......	1	......
......	4	......	....	....	1	....	....	2	......	......	......	......	2	1	......	......
......	10	......	....	....	1	....	1	3	......	2	......	......	2	1	1	. ..
......	26	......	....	....	....	....	....	7	......	1	......	......	......	......	......	......
......	17	......	....	....	....	....	1	10	......	......	......	......	4	......	......	......
... ..	43	......	....	....	....	....	1	17	......	1	......	......	4	......	......	......
......	22	......	....	....	....	....	1	14	......	2	......	......	2	2	......	......
......	18	......	1	....	....	....	1	2	......	2	......	......	3	2	1	1
......	40	......	1	....	....	....	2	16	......	4	......	......	5	4	1	1
......	18	......	....	....	....	....	2	1	......	3	......	......	1	1	......	......
......	12	......	....	....	....	....	1	5	......	1	......	......	2	......	......	1
......	30	.... .	....	....	....	....	3	6	......	4	......	......	3	1	......	1
......	24	......	....	....	....	....	2	2	......	2	......	......	3	......	2	......
......	10	......	1	....	....	....	....	5	......	5	......	......	......	......	1	......
......	34	......	1	....	....	....	2	7	......	7	......	......	3	......	3	......
......	9	......	....	....	....	....	....	5	......	......	......	......	1	......	......	......
......	12	......	....	....	....	....	....	3	......	2	......	......	......	......	......	......
......	21	......	....	....	....	....	....	8	......	2	......	......	1	......	......	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.— Order 4—*Continued.*									
	Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestini (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Grey:										
Males				2						1
Females									1	1
Total				2					1	2
Haldimand:										
Males						1				1
Females										
Total						1				1
Halton:										
Males	1			1						
Females				1						2
Total	1			2						2
Hastings:										
Males										
Females				2						2
Total				2						2
Huron:										
Males	1			1					1	1
Females	3		1	2						
Total	4		1	3					1	1
Kent:										
Males				2						
Females				1		1			1	
Total				3		1			1	
Lambton:										
Males				2						
Females				1						
Total				3						
Lanark:										
Males										
Females										
Total										

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

ORDER 5.—DISEASES OF URINARY SYSTEM.—*Nephritici.*									ORDER 6.—DISEASES OF THE GENERATIVE ORGANS.—*Genetici.*						
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
....	3	2	....	1	....	....	....	....	....	....	....	....	....	....	....
....	....	2	....	....	....	1	1	....	....	2	1	2	....	1	....
....	3	4	....	1	....	1	1	....	....	2	1	2	....	1	....
....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....
....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	2	....	....	....	1	....	....	....	....
....	1	1	....	....	....	1	2	....	....	....	1	....	....	....	....
....	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....
....	....	2	....	....	....	1	1	....	....	....	1	....	....	....	....
....	1	2	....	1	1	5	4	....	....	....	....	....	....	....	....
....	1	....	....	....	....	....	2	....	....	....	1	....	....	....	....
....	2	2	....	1	1	5	6	....	....	....	1	....	....	....	....
1	....	2	....	....	....	1	1	....	....	....	....	....	....	....	....
...	....	1	....	....	....	2	....	....	....	....	....	....	....	2	....
1	....	3	....	....	....	3	1	....	....	....	....	....	....	2	....
....	1	....	....	....	....	1	3	....	....	....	....	....	....	....	....
....	....	1	1	....	....	2	2	....	....	....	....	....	....	1	....
....	1	1	1	....	....	3	5	....	....	....	....	....	....	1	....
....	....	1	....	....	....	1	1	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	1	....	....	....	1	1	....	....	....	....	....	....	....	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.—*Continued.*										
	Order 7.—Diseases of the Locomotive System.—*Myostici.*							Order 8.—Diseases of the Integumentary System.—*Chrotiei.*			
	Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Grey:											
Males	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	77
Females	.....	1	.....	.....	.....	.....	.....	1	.....	.....	88
Total	.....	1	.....	.....	.....	.....	.....	4	.....	.....	165
Haldimand:											
Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73
Halton:											
Males	.....	.....	1	.....	.....	.....	.....	1	.....	.....	42
Females	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	37
Total	.....	.....	1	.....	1	.....	.....	1	.....	.....	79
Hastings:											
Males	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	98
Females	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	87
Total	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	185
Huron:											
Males	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	123
Females	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	113
Total	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	236
Kent:											
Males	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	78
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	66
Total	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	144
Lambton:											
Males	.....	.....	1	.....	.....	.....	.....	1	.....	.....	93
Females	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	73
Total	.....	.....	1	.....	.....	.....	.....	2	.....	.....	166
Lanark:											
Males	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	44
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
Total	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	73

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

ORDER 1.—DEVELOPMENTAL DISEASES OF CHILDREN.—*Paidici.*									ORDER 2.—DEVELOPMENTAL DISEASES OF WOMEN.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Haemorrhagia Umbilicalis (Umbilical Haemorrhage).	Natus Praeter Naturam (Preternatural Birth).	Partus Emortuus (Still Birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion Miscarriage).	Climacteria (Turn of Life).	Eclampsia Paturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Haemorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
				1			4									
1			1				3			1	2	1			4	
1			1	1			7			1	2	1			4	
				2			2									
				2		1	1			1		1			1	
				4		1	3			1		1			1	
	1		1													
			1								1				1	
	1		2								1				1	
	1					5	6									
			1				1					2			8	
	1		1			5	7					2			8	
	1		3			2	1									
						2	1				2	1		1	4	
	1		3			4	2				2	1		1	4	
						5	2									
1			2			1	4				2				7	
1			2			6	6				2				7	
		1				2	2	1								
		1				2	4		1		4	6				
		2				4	6	1	1		4	6				
			1	1			1									
												2				
			1	1			1					2				

TABLE F.—DISEASES BY COUNTIES.—

COUNTIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.*			CLASS V.—VIOLENCE TENDING Order 1.—Accident							
	Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Grey:											
Males	......	29	34	......	......	......	......	......	1	......	......
Females	......	37	50	1	......	......	......	......	......	......	......
Total	......	66	84	1	......	......	......	......	1	......	......
Haldimand:											
Males	......	6	10	......	......	......	......	......	1	......	......
Females	......	8	15	2	......	......	......	......	......	......	......
Total	......	14	25	2	......	......	......	......	1	......	......
Halton:											
Males	1	10	13	......	......	......	......	......	1	......	......
Females	......	9	12	......	......	......	......	......	1	......	......
Total	1	19	25	......	......	......	......	......	2	......	......
Hastings:											
Males	......	36	48	......	......	......	......	......	......	......	......
Females	......	32	44	......	......	......	......	......	......	......	......
Total	......	68	92	......	......	......	......	......	......	......	......
Huron:											
Males	......	30	37	1	......	1	......	......	1	......	......
Females	1	38	50	......	......	......	......	......	......	......	......
Total	1	68	87	1	......	1	......	......	1	......	......
Kent:											
Males	......	20	27	1	......	......	......	......	......	......	......
Females	......	24	41	1	......	......	......	......	......	......	......
Total	......	44	68	2	......	......	......	......	......	......	......
Lambton:											
Males	1	15	22	......	......	......	......	......	3	......	......
Females	......	11	33	......	......	......	......	......	......	......	......
Total	1	26	55	......	......	......	......	......	3	......	......
Lanark:											
Males	......	17	20	......	......	......	......	......	......	......	......
Females	......	13	18	......	......	......	......	......	......	......	......
Total	......	30	38	......	......	......	......	......	......	......	......

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*													
AND NEGLIGENCE.					ORDER 2. HOMICIDE.	ORDER 3.—SUICIDE.—*Autophonici.*				ORDER 4. EXECUT'N.			
						Suicide.							
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total number of Deaths.
......	4	......	1	......	....	......	......	......	1	....	7	7	218
......	......	1	2	1	....	......	......	......	......	....	5	14	234
......	4	1	3	1	....	......	......	......	1	....	12	21	452
......	......	......	2	1	....	......	......	......	2	....	6	1	90
......	......	......	......	......	....	......	......	......	......	....	2	1	98
......	......	......	2	1	....	......	......	......	2	....	8	2	188
......	4	......	2	1	....	......	......	......	2	1	11	3	110
......	......	......	2	2	....	......	......	......	......	....	5	1	97
......	4	......	4	3	....	......	......	......	2	1	16	4	207
......	6	2	8	2	....	......	......	1	......	....	19	3	288
......	......	......	2	......	....	......	......	......	1	....	3	11	286
......	6	2	10	2	....	......	......	1	1	....	22	14	574
......	4	......	5	1	....	......	1	1	......	....	15	8	329
......	1	......	1	......	....	1	......	......	......	....	3	7	298
......	5	......	6	1	....	1	1	1	......	....	18	15	627
1	8	......	11	1	....	......	......	......	......	....	22	20	255
1	......	......	3	......	....	......	......	1	......	....	6	17	247
2	8	......	14	1	....	......	......	1	......	....	28	37	502
......	2	......	9	1	....	......	......	......	......	....	15	6	218
2	2	1	......	......	....	......	......	......	......	....	5	7	208
2	4	1	9	1	....	......	......	......	......	....	20	13	426
......	2	......	2	1	....	......	......	......	......	....	5	......	128
......	......	......	......	......	....	......	1	......	......	....	1	......	127
......	2	......	2	1	....	......	1	......	......	....	6	......	255

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—ZYMOTIC. Order 1.—Miasmatic. Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Leeds and Grenville:											
Males	1	4	.....	5	2	.....	.....	36	1	.....	.....
Females	.....	2	.....	4	1	1	.....	32	1	.....	.....
Total	1	6	.....	9	3	1	.....	68	2	.....	.....
Lennox and Addington:											
Males	.....	.....	.....	4	2	.....	.....	5	1	.....	.....
Females	.....	.....	.....	2	.....	.....	1	3	.....	.....	.....
Total	.....	.....	.....	6	2	.....	1	8	1	.....	.....
Lincoln:											
Males	.....	.....	.....	.....	1	.....	.....	2	2	.....	1
Females	.....	4	.....	2	1	.....	.....	7	1	.....	.....
Total	.....	4	.....	2	2	.....	.....	9	3	.....	1
Middlesex:											
Males	.....	9	1	3	22	1	3	3	3	.....	.....
Females	.....	5	2	5	14	3	3	5	.....	.....	1
Total	.....	14	3	8	36	4	6	8	3	.....	1
Muskoka and Parry Sound:											
Males	.....	6	1	2	1	.....	.....	3	.....	.....	.....
Females	.....	1	.....	2	.....	.....	.....	4	.....	.....	1
Total	.....	7	1	4	1	.....	.....	7	.....	.....	1
Norfolk:											
Males	.....	2	1	2	2	1	.....	4	.....	.....	.....
Females	.....	6	2	.....	6	.....	.....	3	2	.....	.....
Total	.....	8	3	2	8	1	.....	7	2	.....	.....
Northumberland and Durham:											
Males	.....	1	3	9	8	.....	3	3	5	1	1
Females	.....	1	.....	7	2	1	1	4	1	.....	2
Total	.....	2	3	16	10	1	4	7	6	1	3
Ontario:											
Males	.....	1	.....	3	9	.....	2	12	4	.....	1
Females	.....	2	.....	3	3	.....	1	9	.....	.....	.....
Total	.....	3	.....	6	12	.....	3	21	4	.....	1

CAUSES OF DEATHS, 1883.

DISEASES, *Zymotici.*

DISEASES, *Miasmatici.* | ORDER 2.—ENTHETIC OR INOCULATED DISEASES, *Enthetici.*

Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
......	......	......	......	4	......	......	1	2	1	1	8	......	......	......
......	......	......	......	4	......	2	......	......	......	......	2	1	......	......
......	......	......	......	8	......	2	1	2	1	1	10	1	......	......
1	......	......	......	1	......	1	1	......	......	......	2	......	......	......
......	......	......	......	3	......	2	3	......	......	......	1	......	......	......
1	......	......	......	4	......	3	4	......	......	......	3	......	......	......
1	......	......	......	4	......	......	......	......	1	3	1	......	......	......
3	......	......	......	6	......	......	2	......	......	2	2	......	......	......
4	......	......	......	10	......	......	2	......	1	5	3	......	......	......
2	......	......	1	14	......	......	......	3	2	5	2	......	......	......
2	1	......	2	10	......	2	2	......	4	3	2	......	......	......
4	1	......	3	24	......	2	2	3	6	8	4	......	......	......
3	......	1	......	3	......	2	4	......	3	......	2	......	......	......
4	......	......	......	4	......	......	2	......	5	......	6	......	......	......
7	......	1	......	7	......	2	6	......	8	......	8	......	......	......
......	2	......	......	2	......	......	......	......	3	......	2	......	......	......
......	......	1	......	7	......	......	1	......	2	......	5	......	......	......
......	2	1	......	9	......	......	1	......	5	......	7	......	......	......
3	......	......	......	7	2	2	3	......	2	2	2	......	......	......
3	......	......	2	3	......	......	1	......	......	1	2	......	......	......
6	......	......	2	10	2	2	4	......	2	3	4	......	......	......
3	......	......	......	14	......	2	5	......	......	......	10	......	......	......
3	......	......	2	9	......	......	5	......	3	2	14	......	......	......
6	......	......	2	23	......	2	10	......	3	2	24	......	......	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARASITIC DISEASES. *Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets).	Apthæ (Thrush).	Tænia Solum (Tape-Worm).	Vermes (Worms).	Total Zymotic Diseases.
Leeds and Grenville:											
Males										1	67
Females										1	51
Total										2	118
Lennox and Addington:											
Males				1							19
Females											15
Total				1							34
Lincoln:											
Males											16
Females	1			1							32
Total	1			1							48
Middlesex:											
Males				1						1	76
Females					2		3			1	72
Total				1	2		3			2	148
Muskoka and Parry Sound:											
Males										1	32
Females											29
Total										1	61
Norfolk:											
Males											21
Females											35
Total											56
Northumberland & Durham:											
Males	1			1			1			1	61
Females							1				32
Total	1			1			2			1	93
Ontario:											
Males			1	1							68
Females							1				57
Total			1	1			1				125

CAUSES OF DEATHS, 1883—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

Order 1.—Diathetic Diseases.—*Diathetici.*											Order 2.—Tubercular Disease.—*Phthisici.*		
Anaemia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythaemia.	Mortificatio (Mortification).	Noma (Canker).	Podagra (Gout)	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
29	4	.....	.....	6	.....	1	2	.....	.....	1	4	2	.....
19	6	1	2	2	.....	.....	2	.....	.....	1	.....	.....	.....
48	10	1	2	8	.....	1	4	.....	.....	2	4	2	.....
5	7	.....	.....	7	.....	.....	.....	.....	.....	2	1	.....	.....
9	5	.....	1	4	.....	.....	.....	.....	.....	.....	3	1	.....
14	12	.....	1	11	.....	.....	.....	.....	.....	2	4	1	.....
17	3	.....	2	7	.....	.....	.....	.....	.....	2	2	1	.....
8	8	.....	.....	3	.....	.....	.....	.....	.....	2	.....	.....	.....
25	11	.....	2	10	.....	.....	.....	.....	.....	4	2	1	.....
28	6	.....	2	14	.....	1	.....	.....	.....	3	5	1	.....
25	10	.....	.....	17	.....	1	1	.....	.....	3	6	1	.....
53	16	.....	2	31	.....	2	1	.....	.....	6	11	2	.....
24	4	.....	.....	3	.....	.....	.....	.....	.....	1	.....	.....	.....
7	5	.....	.....	3	.....	.....	.....	.....	.....	2	1	1	.....
31	9	.....	.....	6	.....	.....	.....	.....	.....	3	1	1	.....
14	6	.....	.....	3	.....	.....	.....	.....	.....	3	.....	.....	.....
11	5	.....	1	2	.....	.....	.....	.....	.....	2	.....	.....	1
25	11	.....	1	5	.....	.....	.....	.....	.....	5	.....	.....	1
19	8	.....	3	8	.....	.....	.....	.....	1	8	3	.....	.....
12	2	.....	1	11	.....	.....	1	.....	.....	3	1	2	.....
31	10	.....	4	19	.....	.....	1	.....	1	11	4	2	.....
13	4	.....	2	3	.....	.....	1	.....	.....	4	3	1	.....
18	6	.....	.....	7	.....	.....	.....	.....	.....	6	3	2	1
31	10	.....	2	10	.....	.....	1	.....	.....	10	6	3	

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS II.—*Continued.* Order 2.—*Continued.* Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	CLASS III.—LOCAL. Order 1.—Diseases of the Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Leeds and Grenville:												
Males	38	......	.....	87	3	......	......	3	3	......	......	....
Females	40	......	......	73	5	......	......	3	3	1	......	....
Total	78	......	......	160	8	......	......	6	6	1	......	....
Lennox and Addington:												
Males	17	1	......	40	4	......	......	5	......	......	......	....
Females	24	......	......	47	......	......	......	4	......	......	......	....
Total	41	1	......	87	4	......	......	9	......	......	......	....
Lincoln:												
Males	28	......	......	62	7	......	......	2	3	1	.....	....
Females	26	......	1	48	2	......	......	6	......	1	......	....
Total	54	......	1	110	9	......	......	8	3	2	......	....
Middlesex:												
Males	41	1	2	104	18	......	......	15	1	9	......	....
Females	56	1	......	121	10	.....	......	12	4	4	2	....
Total	97	2	2	225	28	.....	......	27	5	13	2	....
Muskoka & Parry Sound:												
Males	7	......	1	40	1	......	......	9	......	1	......	....
Females	9	......	......	28	1	......	....	5	2	1	......	....
Total	16	.....	1	68	2	......	......	14	2	2	......	....
Norfolk:												
Males	14	......	......	40	5	......	......	6	......	2	......	....
Females	18	......	......	40	3	......	......	3	2	......	......	....
Total	32	......	......	80	8	.....	......	9	2	2	......	....
Northumberland and Durham:												
Males	54	......	......	104	10	......	......	8	4	2	2	....
Females	63	......	1	96	8	......	......	5	2	2	......	....
Total	117	......	1	200	18	......	......	13	6	4	2	....
Ontario:												
Males	32	......	......	63	6	......	......	5	1	2	......	....
Females	28	1	......	72	6	......	......	8	4	1	......	....
Total	60	1	......	135	12	......	......	13	5	3	......	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane lining Heart).	Epistaxis (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
....	....	....	2	....	6	1	....	....	....	....	....	....	....	....	....	2	....
1	....	3	2	....	4	....	....	....	....	....	....	....	....	....	....	4	1
1	....	3	4	....	10	1	....	....	....	....	....	....	....	....	....	6	1
3	....	....	1	1	3	....	....	....	....	....	....	....	....	....	....	....	....
1	....	1	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
4	....	1	1	1	5	....	....	....	....	....	....	....	....	....	....	....	....
1	....	10	1	1	2	....	....	....	....	....	2	....	....	1	....	....	1
....	....	3	....	1	2	....	....	....	....	....	2	....	....	....	....	3	2
1	....	13	1	2	4	....	....	....	....	....	4	....	....	1	....	3	3
....	....	8	1	2	15	....	....	....	....	....	1	....	1	....	....	....	....
....	....	2	2	1	8	....	....	1	....	....	....	....	....	1	....	....	1
....	....	10	3	3	23	....	....	1	....	....	1	....	1	1	....	....	1
....	....	2	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....
....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	4	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....
....	....	3	....	....	3	....	1	....	....	....	....	....	....	....	....	....	....
....	....	2	....	....	3	....	....	....	....	....	....	....	....	....	....	1	....
....	....	5	....	....	6	....	1	....	....	....	....	....	....	....	....	1	....
1	....	4	2	1	10	1	....	....	....	1	....	1	....	1	....	....	....
....	....	3	6	2	4	....	....	....	....	1	1	2	....	....	....	3	....
1	....	7	8	3	14	1	....	....	....	2	1	3	....	1	....	3	....
....	....	7	2	....	11	....	....	....	....	....	....	....	....	....	....	1	....
....	....	6	1	1	8	....	....	....	....	....	....	....	....	....	....	....	....
....	....	13	3	1	19	....	....	....	....	....	....	....	....	....	....	1	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III. Order 2—*Continued.* Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Order 3.—Diseases of the Respiratory Sys- Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Leeds and Grenville :												
Males	10	......	......	......	.....	11	4	......	......	......	......	2
Females	15	......	......	......	......	7	3	......	......	......	......	1
Total	25	......	......	......	......	18	7	......	......	......	......	3
Lennox and Addington :												
Males	3	......	......	......	......	3	......	......	......	......	......	....
Females	7	......	......	......	......	5	1	......	......	......	......	....
Total	10	......	......	......	......	8	1	......	......	......	......	....
Lincoln												
Males	11	......	......	......	......	2	9	......	......	......	......	1
Females	13	......	......	1	......	4	4	......	......	......	......	....
Total	24	......	......	1	......	6	13	......	......	......	......	1
Middlesex :												
Males	35	......	......	......	......	7	9	......	......	......	1	...
Females	24	......	......	......	......	9	9	......	......	......	......	1
Total	59	......	......	......	......	16	18	......	......	......	1	1
Muskoka & Parry Sound :												
Males	1	......	......	......	......	6	5	......	......	......	......	3
Females	5	......	......	......	......	3	5	......	......	......	......	....
Total	6	......	......	......	......	9	10	......	......	......	......	3
Norfolk :												
Males	9	......	......	......	......	2	3	......	......	......	......	2
Females	11	......	......	......	......	10	3	......	......	......	......	....
Total	20	......	......	......	......	12	6	......	......	......	......	2
Northumberland and Durham :												
Males	15	......	......	......	......	8	6	......	1	......	......	....
Females	12	......	......	......	......	6	8	......	......	......	......	....
Total	27	......	......	......	......	14	14	......	1	......	......	....
Ontario :												
Males	5	......	......	......	......	7	9	......	......	......	1	2
Females	11	......	......	......	......	8	10	......	......	......	1	1
Total	16	......	......	......	......	15	19	......	......	......	2	3

CAUSES OF DEATHS, 1883—*Continued*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleura-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
.....	19	.....	....	....	....	....	3	5	.....	3	.....	.....	.....	1	.....	.....
.....	12	.....	....	....	....	....	1	8	.....	1	.....	.....	1	.....	2	.....
.....	31	.....	....	....	....	....	4	13	.....	4	.....	.....	1	1	2	.....
.....	5	.....	....	....	....	....	2	3	.....	.....	.....	.....	1	.....	.....	.....
.....	8	.....	....	1	....	....	....	1	.....	1	.....	.....	.....	.....	.....	.....
.....	13	.....	....	1	....	....	2	4	.....	1	.....	.....	1	.....	.....	.....
.....	20	.....	1	....	....	....	1	3	.....	5	.....	.....	.....	.....	.....	.....
.....	11	.....	....	....	1	....	1	1	.....	.....	.....	.....	5	.....	1	.....
.....	31	.....	1	...	1	....	2	4	.....	5	.....	.....	5	.....	1	.....
.....	45	.....	....	....	1	....	1	17	.....	4	.....	.....	5	1	1	.....
.....	28	.....	....	....	....	....	2	16	.....	3	.....	.....	2	2	1	.....
.....	73	.....	....	....	1	....	3	33	.....	7	.....	.....	7	3	2	.....
.....	7	.....	....	....	....	....	1	2	.....	.....	.....	.....	2	.....	.....	.....
.....	2	.....	....	....	....	....	....	2	.....	.....	.....	.....	.....	.....	.....	.....
.....	9	.....	....	....	....	....	1	4	.....	.....	.....	.....	2	.....	.....	.....
.....	7	.....	....	....	....	....	1	6	.....	.....	.....	.....	.....	.....	2	.....
.....	7	.....	....	....	....	....	....	2	.....	2	.....	.....	1	.....	1	.....
.....	14	.....	....	....	....	....	1	8	.....	2	.....	.....	1	.....	3	.....
.....	25	.....	....	....	....	....	1	6	.....	1	.....	.....	4	3	.....	.....
.....	25	.....	....	....	....	....	....	11	.....	1	.....	.....	2	1	2	.....
.....	50	.....	....	...	....	....	1	17	.....	2	.....	.....	6	4	2	.....
.....	20	.....	....	....	....	....	....	6	.....	3	.....	.....	3	.....	1	.....
.....	21	.....	....	....	....	....	1	5	.....	.....	.....	.....	1	.....	3	.....
.....	41	.....	....	...	....	....	1	11	.....	3	.....	.....	4	.....	4	.....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.— Order 4.—*Continued.* Obstipatio (Constipation.)	Œsophagitis (Inflammation of Gullet.)	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestini (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Leeds and Grenville:										
Males				2						
Females				2						
Total				4						
Lennox and Addington:										
Males										
Females				1						1
Total				1						1
Lincoln:										
Males					2					1
Females				1		1	1			
Total				1	2	1	1			1
Middlesex:										
Males				6	1		1			2
Females				3			2			2
Total				9	1		3			4
Muskoka and Parry Sound:										
Males				2						
Females	1									
Total	1			2						
Norfolk:										
Males				1						
Females				2						1
Total				3						1
Northumberland and Durham:										
Males	1			1						
Females	1			4			1			
Total	2			5			1			
Ontario:										
Males				5						
Females				2	1					
Total				7	1					

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*								Order 6.—Diseases of the Generative Organs.—*Genetici.*							
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
.....	1	1	.....	3	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	1	.....	.....	.....	.....
.....	1	1	.....	3	.....	2	7	.....	.....	.....	1	.....	.....	.....	.....
.....	.....	1	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	1	.....	1	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2	3	.....	.....	.....
.....	1	2	.....	1	.....	2	1	.....	.....	.....	2	3	.....	.....	.....
.....	4	2	1	1	.....	1	5	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	3	4	.....	.....	.....	.....	.....	.....	1	.....
.....	4	3	1	1	.....	4	9	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	1	4	.....	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	2	.....
.....	1	4	.....	3	.....	1	5	.....	.....	.....	.....	.....	.....	2	.....
.....	3	3	.....	1	.....	2	3	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....	1	.....	.....	2	1
.....	3	3	.....	1	.....	4	4	.....	.....	.....	1	.....	.....	2	1

TABLE F.—DEATHS BY COUNTIES.—

SEX.	CLASS III.—*Continued.* Order 7.—Diseases of the Locomotive System.—*Myostici.* Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Order 8.—Diseases of the Integumentary System.—*Chrotici.* Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Leeds and Grenville:											
Males	......	......	......	......	......	......	......	1	......	......	91
Females	......	......	......	......	......	......	......	3	......	......	88
Total	......	......	......	......	......	......	......	4	......	......	179
Lennox and Addington:											
Males	......	......	......	......	......	......	......	......	......	......	38
Females	......	......	......	......	......	......	......	......	......	......	34
Total	......	......	......	......	......	......	......	......	......	......	72
Lincoln:											
Males	......	......	......	......	......	......	......	......	......	......	94
Females	......	......	......	......	......	......	......	1	......	......	73
Total	......	......	......	......	......	......	......	1	......	......	167
Middlesex:											
Males	......	......	......	......	......	......	......	......	......	......	222
Females	......	......	1	......	......	......	......	......	......	......	162
Total	......	......	1	......	......	......	......	......	......	......	384
Muskoka and Parry Sound.											
Males	......	......	......	......	......	......	......	2	......	......	51
Females	......	......	......	......	......	......	......	1	......	......	30
Total	......	......	......	......	......	......	......	3	......	......	81
Norfolk:											
Males	1	......	......	......	......	......	......	1	......	......	57
Females	......	......	......	......	......	......	......	1	......	......	56
Total	1	......	......	......	......	......	......	2	......	......	113
Northumberland & Durham:											
Males	......	......	......	......	......	......	......	1	......	......	131
Females	......	......	......	......	......	......	......	......	......	......	119
Total	......	......	......	......	......	......	......	1	......	......	250
Ontario:											
Males	......	......	......	......	......	......	......	......	......	......	109
Females	......	......	......	......	......	......	......	1	......	......	108
Total	......	......	......	......	......	......	......	1	......	......	217

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Hæmorrhagia Umbilicalis (Umbilical Hæmorrhage).	Natus Prater Naturam (Preternatural Birth).	Partus Emortuus (Still-birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life).	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	5	...
...	...	...	...	...	...	...	2	1	...	...	...	1	1	...	5	...
...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	6	...
...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	6	...
...	...	...	...	...	1	7	1	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	2	6	...	...	...	...	1	...	...	2	...
...	...	1	...	...	1	9	7	...	...	...	...	1	...	...	2	
...	1	...	...	1	...	9	11	...	...	...	...	...	...	...	...	...
1	1	...	...	...	...	6	10	1	...	1	...	6	...	...	6	...
1	2	...	...	1	...	15	21	1	...	1	...	6	...	...	6	...
1	...	...	...	...	...	2	3	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	3	...
2	...	...	...	...	...	2	5	...	...	...	...	...	...	...	3	...
...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	...	3	1	...	3	...
...	...	...	...	...	...	2	2	...	...	...	...	3	1	...	3	...
...	...	...	3	...	...	1	3	...	...	...	...	...	...	...	...	...
1	...	1	1	...	...	...	1	...	2	...	1	2	...	2	7	...
1	...	1	4	...	...	1	4	...	2	...	1	2	...	2	7	...
...	...	...	2	...	...	3	...	...	...	...	...	...	...	...	...	...
...	...	...	2	1	...	2	3	...	1	...	1	1	...	...	1	1
...	...	...	4	1	...	5	3	...	1	...	1	1	...	...	1	1

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.* Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	CLASS V.—VIOLENCE TENDING Order 1.—Accident Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Leeds and Grenville:											
Males	......	32	34	......	......	......	......	......	......	1	......
Females	......	36	44	......	......	......	......	......	......	......	......
Total	......	68	78	......	......	......	......	......	......	1	......
Lennox and Addington:											
Males	1	14	17	......	......	1	......	......	......	......	......
Females	......	22	29	2	......	......	......	......	......	......	......
Total	1	36	46	2	......	1	......	......	......	......	......
Lincoln:											
Males	......	8	17	......	......	......	......	......	......	......	......
Females	......	16	28	......	......	......	......	......	......	......	......
Total	......	24	45	......	......	......	......	......	......	......	......
Middlesex:											
Males	3	40	65	......	......	......	......	......	......	......	......
Females	1	46	79	......	......	......	......	......	2	1	......
Total	4	86	144	......	......	......	......	......	2	1	......
Muskoka and Parry Sound:											
Males	......	4	10	1	......	1	2	......	......	......	......
Females	......	4	10	2	......	......	......	......	......	......	......
Total	......	8	20	3	......	1	2	......	......	......	......
Norfolk:											
Males	1	6	10	1	......	......	......	1	......	......	......
Females	2	9	19	1	......	......	......	......	......	......	......
Total	3	15	29	2	......	......	......	1	......	......	......
Northumberland and Durham:											
Males	2	38	47	1	1	......	......	......	......	1	......
Females	......	39	57	2	......	......	......	......	......	......	......
Total	2	77	104	3	1	......	......	......	......	1	......
Ontario:											
Males	......	20	25	......	......	......	......	......	......	......	......
Females	......	19	32	1	......	......	......	......	......	......	......
Total	......	39	57	1	......	......	......	......	......	......	......

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*

and Negligence.					Order 2. Homicide.	Order 3.—Suicide.—*Autophonici.* Suicide.				Order 4. Execut'n.			
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera Wounds.	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total Number of Deaths.
....	3	....	9	4	....	....	....	....	....	....	17	6	302
....	....	....	1	....	....	....	....	....	....	....	1	11	268
....	3	....	10	4	....	....	....	....	....	....	18	17	570
....	4	....	1	....	....	....	....	....	....	....	6	2	122
1	....	....	2	....	....	....	....	....	....	....	3	9	139
1	4	....	3	....	....	....	....	....	....	....	9	11	261
....	1	....	3	1	....	....	....	....	1	....	6	11	206
....	....	1	....	....	....	....	....	1	1	....	3	11	195
....	1	1	3	1	....	....	....	1	2	....	9	22	401
....	6	1	4	9	....	....	1	....	1	....	22	15	504
1	1	....	4	....	....	1	1	....	....	....	11	27	472
1	7	1	8	9	....	1	2	....	1	....	33	42	976
....	8	....	5	....	....	....	....	....	....	....	17	3	153
....	1	1	....	....	....	....	....	....	....	....	4	3	104
....	9	1	5	....	....	....	....	....	....	....	21	6	257
1	2	1	6	....	....	....	1	....	1	....	14	1	143
....	....	1	....	....	....	....	....	....	....	....	2	2	154
1	2	2	6	....	....	....	1	....	1	....	16	3	297
1	1	1	6	3	2	....	....	....	....	....	17	11	371
....	1	....	1	....	....	1	....	....	....	....	5	11	320
1	2	1	7	3	2	1	....	....	....	....	22	22	691
....	9	2	4	2	....	....	....	....	....	....	17	10	292
....	1	1	1	1	....	....	....	....	....	....	5	10	284
....	10	3	5	3	....	....	....	....	....	....	22	20	576

TABLE F.—DEATHS BY COUNTIES.—

CLASS I.—ZYMOTIC

ORDER 1.—MIASMATIC

COUNTIES.	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Oxford:											
Males	.....	2	.....	7	7	.....	2	19	2	.....	.....
Females	.....	3	1	5	.....	.....	2	15	6	.....	.....
Total	.....	5	1	12	7	.....	4	34	8	.....	.....
Peel:											
Males	.....	.....	.....	2	3	.....	.....	9	.....	.....	.....
Females	.....	2	.....	2	1	.....	3	8	.....	.....	.....
Total	.....	2	.....	4	4	.....	3	17	.....	.....	.....
Perth:											
Males	.....	3	2	3	3	.....	.....	6	1	.....	.....
Females	.....	4	.....	4	3	.....	1	5	2	.....	.....
Total	.....	7	2	7	6	.....	1	11	3	.....	.....
Peterborough:											
Males	.....	2	1	3	7	.....	3	6	1	.....	.....
Females	.....	1	.....	4	5	.....	2	9	1	.....	.....
Total	.....	3	1	7	12	.....	5	15	2	.....	.....
Prescott and Russell:											
Males	.....	1	.....	6	7	.....	2	8	.....	.....	.....
Females	.....	1	.....	2	4	.....	.....	18	.....	.....	.....
Total	.....	2	.....	8	11	.....	2	26	.....	.....	.....
Prince Edward:											
Males	.....	.....	.....	2	.....	.....	.....	3	1	.....	.....
Females	.....	1	.....	3	.....	.....	3	.....	1	.....	.....
Total	.....	1	.....	5	.....	.....	3	3	2	.....	.....
Renfrew:											
Males	.....	3	.....	4	3	.....	3	15	.....	.....	.....
Females	.....	4	1	5	7	.....	1	7	.....	.....	.....
Total	.....	7	1	9	10	.....	4	22	.....	.....	.....
Simcoe:											
Males	.....	4	2	4	4	2	2	10	6	.....	.....
Females	.....	2	1	2	3	.....	.....	10	1	.....	1
Total	.....	6	3	6	7	2	2	20	7	.....	1

CAUSES OF DEATHS, 1883.

DISEASES, *Zymotici.*

DISEASES, *Miasmatici.*														ORDER 2.—ENTHETIC OR INOCULATED DISEASES, *Enthetici.*
Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
......	......	......	......	9	......	......	1	1	......	......	1	......	......	......
......	......	......	......	4	......	......	1	......	......	3	6	......	......	......
......	......	......	......	13	......	......	2	1	......	3	7	......	......	......
......	......	......	1	4	......	1	......	......	......	......	......	......	......	......
3	......	......	1	2	......	......	1	......	......	1	2	......	......	......
3	......	......	2	6	......	1	1	......	......	1	2	......	......	......
......	......	......	......	3	......	1	1	......	1	......	6	......	......	......
1	1	......	......	......	......	......	1	......	1	1	4	......	......	......
1	1	......	......	3	......	1	2	......	2	1	10	......	......	......
5	......	......	......	6	......	......	7	1	......	......	9	......	......	......
3	......	......	1	......	......	......	11	......	1	1	5	1	......	......
8	......	......	1	6	......	......	18	1	1	1	14	1	......	......
......	......	......	......	6	......	1	1	......	......	......	4	......	......	......
......	......	......	......	4	......	1	1	1	......	......	4	......	1	......
......	......	......	......	10	......	2	2	1	......	......	8	......	1	......
......	......	......	......	1	1	1	1	1	......	......	2	......	......	1
......	......	......	2	4	......	......	2	1	......	......	4	......	......	......
......	......	......	2	5	1	1	3	2	......	......	6	......	......	1
......	......	......	......	5	......	2	......	......	2	......	1	......	......	1
......	......	......	......	1	......	2	2	......	......	......	......	......	......	......
......	......	......	......	6	......	4	2	......	2	......	1	......	......	1
10	......	1	2	6	......	......	......	......	1	2	13	1	......	......
5	......	1	1	5	......	......	1	......	6	1	14	1	......	......
15	......	2	3	11	......	......	1	......	7	3	27	2	......	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARSITIC DISEASES.—*Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets).	Apthæ (Thrush).	Tænia Solum (Tape Worm).	Vermes (Worms).	Total Zymotic Diseases.
Oxford:											
Males	....	....	....	....	....	....	....	....	....	1	52
Females	....	....	....	....	....	....	....	....	....	....	46
Total	....	....	....	....	....	....	....	....	....	1	98
Peel:											
Males	....	....	....	....	....	....	....	....	....	....	20
Females	....	....	....	....	....	....	....	....	....	....	26
Total	....	....	....	....	....	....	....	....	....	....	46
Perth:											
Males	....	....	....	....	....	....	....	....	....	....	30
Females	....	....	....	....	....	....	....	....	....	....	28
Total	....	....	....	....	....	....	....	....	....	....	58
Peterborough:											
Males	1	....	....	1	....	....	....	....	....	....	53
Females	....	....	....	....	....	....	....	....	....	....	45
Total	1	....	....	1	....	....	....	....	....	....	98
Prescott and Russell:											
Males	....	....	....	....	....	....	1	....	....	....	37
Females	....	....	....	....	....	....	....	....	....	1	38
Total	....	....	....	....	....	....	1	....	....	1	75
Prince Edward:											
Males	1	....	....	....	....	....	1	....	....	....	16
Females	....	....	....	....	....	....	....	....	....	1	22
Total	1	....	....	....	....	....	1	....	....	1	38
Renfrew:											
Males	....	....	....	....	....	....	....	....	1	....	40
Females	....	....	....	....	....	....	....	....	....	....	30
Total	....	....	....	....	....	....	....	....	1	....	70
Simcoe:											
Males	....	....	1	....	....	....	....	....	....	....	71
Females	....	....	....	....	....	....	....	....	1	1	57
Total	....	....	1	....	....	....	....	....	1	1	128

CAUSES OF DEATHS, 1883.—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

ORDER 1.—DIATHETIC DISEASES.—*Diathetici.*											ORDER 2.—TUBERCULAR DISEASE.—*Phthisici.*		
Anaemia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythaemia.	Mortificatio (Mortification.)	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
14	3	.....	.....	6	.....	.....	.....	.....	.....	.....	2	.....	.....
17	8	.....	1	5	.....	.....	.....	.....	.....	3	2	.....	.....
31	11	.....	1	11	.....	.....	.....	.....	.....	3	4	.....	.....
10	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	3	.....	.....	2	.....	.....	.....	.....	.....	1	3	.....	.....
17	5	.....	1	2	.....	.....	.....	.....	.....	1	3	.....	.....
18	9	.....	2	2	.....	1	.....	.....	.....	2	3	.....	.....
12	3	.....	1	2	.....	1	.....	.....	.....	3	.....	1	.....
30	12	.....	3	4	.....	2	.....	.....	.....	5	3	1	.....
19	3	.....	.....	3	.....	.....	.....	.....	.....	2	1	.....	.....
10	9	.....	.....	3	.....	.....	.....	.....	.....	3	1	1	.....
29	12	.....	.....	6	.....	.....	.....	.....	.....	5	2	1	.....
43	.....	.....	2	1	.....	1	.....	.....	.....	1	.....	.....	.....
38	2	.....	.....	1	.....	.....	.....	.....	.....	2	.....	.....	.....
81	2	.....	2	2	.....	1	.....	.....	.....	3	.....	.....	.....
5	1	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
7	3	.....	.....	1	.....	.....	1	.....	.....	1	.....	.....	.....
12	4	.....	.....	2	.....	.....	1	.....	.....	2	.....	.....	.....
12	1	.....	.....	2	.....	.....	.....	.....	.....	2	1	1	.....
24	3	.....	.....	3	.....	.....	.....	.....	.....	.....	1	.....	.....
36	4	.....	.....	5	.....	.....	.....	.....	.....	2	2	1	.....
18	9	.....	2	4	.....	.....	2	.....	.....	7	3	.....	.....
18	4	.....	.....	8	.....	.....	.....	.....	.....	2	1	.....	.....
36	13	.....	2	12	.....	.....	2	.....	.....	9	4	.....	.....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS II.—*Continued.* Order 2—*Continued.* Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	CLASS III.—LOCAL. Order 1.—Diseases of the Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Oxford:												
Males	30	1	3	59	6	......	......	9	......	......	......	....
Females	43	......	......	79	6	......	......	7	......	1	......	1
Total	73	1	3	138	12	......	......	16	......	1	......	1
Peel:												
Males	17	......	......	30	5	......	......	1	1	......	......	....
Females	19	......	......	35	4	......	......	1	......	......	......	....
Total	36	......	......	65	9	......	......	2	1	......	......	....
Perth:												
Males	21	......	......	58	4	......	......	9	4	1	......	....
Females	29	......	......	52	......	......	......	3	5	......	......	....
Total	50	......	......	110	4	......	......	12	9	1	......	....
Prescott and Russell:												
Males	22	......	......	50	1	2	......	4	1	......	......	....
Females	24	......	......	51	1	......	......	7	1	1	......	....
Total	46	......	......	101	2	2	......	11	2	1	......	....
Peterborough:												
Males	17	......	1	66	1	......	......	4	1	......	......	....
Females	28	......	......	71	......	......	......	2	......	......	......	....
Total	45	......	1	137	1	......	......	6	1	......	......	....
Prince Edward:												
Males	13	......	......	21	2	......	......	3	2	......	......	....
Females	22	1	......	36	2	......	......	1	......	1	......	....
Total	35	1	......	57	4	......	......	4	2	1	......	....
Renfrew:												
Males	19	......	......	38	4	......	......	2	2	......	......	....
Females	18	......	......	49	3	......	......	3	......	1	......	....
Total	37	......	......	87	7	......	......	5	2	1	......	....
Simcoe:												
Males	26	......	......	71	5	......	......	9	1	1	......	....
Females	32	......	......	65	2	......	......	4	1	5	......	....
Total	58	......	......	136	7	......	......	13	2	6	......	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane Lining Heart).	Epistaxis (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
....	....	4	....	1	9	....	....	....	....	....	1	1	1	....	....	2	....
1	....	3	1	1	5	....	....	....	....	....	....	....	....	....	....	2	....
1	....	7	1	2	14	....	....	....	....	....	1	1	1	....	....	4	....
....	....	....	....	1	4	....	1	....	....	....	....	....	....	....	....	....	....
....	....	3	2	....	4	....	....	....	....	....	....	....	....	....	....	....	....
....	....	3	2	1	8	....	1	....	....	....	....	....	....	....	....	....	....
....	....	6	1	....	4	....	....	....	....	....	....	....	....	....	....	1	....
....	....	4	1	1	1	1	....	....	....	....	....	....	....	....	....	1	....
....	....	10	2	1	5	1	....	....	....	....	....	....	....	....	....	2	....
....	....	3	1	....	3	....	....	....	....	....	....	....	....	1	....	....	....
....	....	5	3	1	1	....	....	....	....	....	....	....	....	....	....	....	....
....	....	8	4	1	4	....	....	....	....	....	....	....	....	1	....	....	....
....	....	3	....	1	5	....	....	....	....	....	....	....	....	....	....	....	1
....	....	2	....	....	2	....	1	....	....	....	....	....	....	....	....	3	....
....	....	5	....	1	7	....	1	....	....	....	....	....	....	....	....	3	1
....	1	1	....	....	2	1	....	....	....	....	....	....	....	....	....	....	....
....	....	3	1	1	3	....	1	....	....	....	....	....	....	....	....	....	....
....	1	4	1	1	5	1	1	....	....	....	....	....	....	....	....	....	....
....	....	1	....	....	3	....	....	....	....	....	....	....	....	....	....	2	....
....	1	1	1	1	2	....	....	....	....	1	....	....	....	....	....	1	....
....	1	2	1	1	5	....	....	....	....	1	....	....	....	....	....	3	....
....	1	3	....	1	2	....	....	....	....	....	....	....	....	....	....	1	....
....	....	6	....	3	9	....	....	....	....	....	....	....	....	....	....	1	....
....	1	9	....	4	11	....	....	....	....	....	....	....	....	....	....	2	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.											
	ORDER 2—*Continued.*					ORDER 3.—DISEASES OF THE RESPIRATORY SYS-						
	Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Oxford:												
Males	16	...	...	1	...	8	6	...	...	...	1	1
Females	19	1	...	...	...	6	6	...	...	...	...	...
Total	35	1	...	1	...	14	12	...	...	...	1	1
Peel:												
Males	7	...	...	...	...	5	3	...	...	...	...	1
Females	8	...	...	...	...	1	1	...	...	...	1	1
Total	15	...	...	...	...	6	4	...	...	...	1	2
Perth:												
Males	8	...	...	...	...	1	8	...	...	...	...	...
Females	8	...	...	...	...	5	6	...	...	...	...	...
Total	16	...	...	...	...	6	14	...	...	...	...	...
Prescott and Russell:												
Males	10	...	...	...	...	5	4	...	...	...	...	...
Females	9	...	...	...	...	3	4	...	...	...	...	...
Total	19	...	...	...	...	8	8	...	...	...	...	...
Peterborough:												
Males	4	...	...	...	...	2	2	...	...	...	...	2
Females	5	...	...	...	...	5	2	...	...	...	...	1
Total	9	...	...	...	...	7	4	...	...	...	...	3
Prince Edward:												
Males	2	...	...	...	...	5	3	...	...	...	...	1
Females	4	1	...	...	...	3	2	...	...	...	...	...
Total	6	1	...	...	...	8	5	...	...	...	...	1
Renfrew:												
Males	8	...	...	...	...	3	5	1	...	...	...	2
Females	7	...	...	...	...	2	5	...	...	...	...	...
Total	15	...	...	...	...	5	10	1	...	...	...	2
Simcoe:												
Males	12	...	...	...	...	9	13	...	...	...	1	...
Females	9	...	...	...	...	7	9	...	...	...	...	1
Total	21	...	...	...	...	16	22	...	...	...	1	1

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleuro-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Cholelithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hematemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	21	......	....	....	....	....	1	3	......	1	......	......	1	1	1	......
......	14	......	1	....	....	....	....	5	......	3	......	......	2	......	......	......
......	35	......	1	....	....	....	1	8	......	4	......	......	3	1	1	......
......	5	......	....	....	....	....	....	7	......	......	......	......	3	......	......	......
......	15	......	....	....	....	....	....	1	......	......	......	......	......	......	......	......
......	20	......	....	....	....	....	....	8	......	......	......	......	3	......	......	......
......	16	......	....	....	2	....	....	10	......	1	......	1	1	......	......	......
......	14	......	....	....	2	....	....	3	......	1	......	......	......	......	......	......
......	30	......	....	....	4	....	....	13	......	2	......	1	1	......	......	......
......	15	......	....	....	1	....	....	5	......	1	......	......	2	1	......	......
......	14	......	....	....	....	....	1	3	......	1	......	......	1	......	......	......
......	29	......	....	....	1	....	1	8	......	2	......	......	3	1	......	......
......	7	......	....	....	....	....	....	2	......	......	......	......	1	1	......	......
......	12	......	....	....	....	....	....	1	......	1	......	......	......	......	......	......
......	19	......	....	....	....	....	....	3	......	1	......	......	1	1	......	......
......	9	......	....	....	....	....	....	4	......	3	......	......	1	......	......	......
......	6	......	1	....	....	....	....	5	......	......	......	......	......	......	......	......
......	15	......	1	....	....	....	....	9	......	3	......	......	1	......	......	......
......	6	......	....	....	....	....	1	2	......	2	......	......	1	......	......	......
......	8	......	....	....	....	....	1	3	......	1	......	......	2	......	......	......
......	14	......	....	....	....	....	2	5	......	3	......	......	3	......	......	......
......	24	......	1	....	....	....	....	9	......	......	......	......	1	2	1	......
......	23	......	....	....	....	....	....	3	......	......	......	......	4	......	......	......
......	47	......	1	....	....	....	....	12	......	......	......	......	5	2	1	......

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.— Order 4—*Continued.* Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestini (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Oxford :										
Males	1	......	......	5	......	......	......	......	......	......
Females	......	......	......	......	......	......	......	......	......	......
Total	1	......	......	5	......	......	......	......	......	......
Peel :										
Males	......	......	......	......	......	......	......	......	......	1
Females	1	......	......	......	......	......	......	......	......	......
Total	1	......	......	......	......	......	......	......	......	1
Perth :										
Males	1	......	......	3	......	......	......	......	1	1
Females	......	......	......	4	......	......	......	......	......	......
Total	1	......	......	7	......	......	......	......	1	1
Peterborough :										
Males	2	......	......	......	1	......	......	......	......	1
Females	......	......	......	......	......	......	......	......	......	......
Total	2	......	......	......	1	......	......	......	......	1
Prescott and Russell :										
Males	......	......	......	1	......	......	......	......	......	......
Females	......	......	......	......	......	......	......	......	......	......
Total	......	......	......	1	......	......	......	......	......	......
Prince Edward :										
Males	......	......	......	......	......	......	......	......	......	......
Females	......	......	......	......	......	......	......	......	......	......
Total	......	......	......	......	......	......	......	......	......	......
Renfrew :										
Males	1	......	......	......	......	......	......	......	......	......
Females	1	......	......	1	......	......	......	......	......	......
Total	2	......	......	1	......	......	......	......	......	......
Simcoe :										
Males	......	......	......	1	......	......	......	......	......	......
Females	......	......	......	1	......	......	......	......	......	......
Total	......	......	......	2	......	......	......	......	......	......

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*									Order 6.—Diseases of the Generative Organs.—*Genetici.*						
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
....	1	1	....	....	....	5	3	....	....	....	....	....	....	....	....
....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....
....	1	2	....	....	....	6	3	....	....	....	....	....	....	....	....
....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....
....	....	1	....	....	....	2	....	....	....	....	....	....	....	....	....
....	1	1	....	....	....	3	....	....	....	....	....	....	....	....	....
....	2	1	....	....	....	1	3	....	....	....	....	....	....	....	....
....	....	1	....	....	....	....	2	....	....	1	1	....	....	1	....
....	2	2	....	....	....	1	5	....	....	1	1	....	....	1	....
....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	1	....	....	....	3	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
....	1	2	....	1	....	....	2	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
....	1	2	....	1	....	....	3	....	....	....	....	....	....	....	....
1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1
1	....	....	....	1	....	....	....	....	....	....	1	....	....	....	1
....	....	1	1	2	....	3	....	....	....	....	....	....	....	....	....
1	....	....	....	....	....	....	1	....	....	....	2	....	....	....	1
1	....	1	1	2	....	3	1	....	....	....	2	....	....	....	1

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.—*Continued.*										
	ORDER 7.—DISEASES OF THE LOCOMOTIVE SYSTEM.—*Myostici.*							ORDER 8.—DISEASES OF THE INTEGUMENTARY SYSTEM.—*Chrotici.*			
	Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Oxford:											
Males			1					1			114
Females								1			88
Total			1					2			202
Peel:											
Males											47
Females								1			47
Total								1			94
Perth:											
Males									1		92
Females					1						67
Total					1				1		159
Peterborough:											
Males											67
Females								2			60
Total								2			127
Prescott and Russell:											
Males											38
Females											39
Total											77
Prince Edward:											
Males								1			47
Females			1					2			39
Total			1					3			86
Renfrew:											
Males											48
Females								1			49
Total								1			97
Simcoe:											
Males								2			107
Females			1					4			98
Total			1					6			205

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Hæmorrhagia Umbilicalis (Umbilical Hæmorrhage).	Natus Præter Naturam (Preternatural Birth).	Partus Emortuus (Still Birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life).	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
....	....	1	1	....	1	....	11	1	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	3	1	....	....	3	2	....	....	4	....
....	....	1	1	....	1	....	14	2	....	....	3	2	....	....	4	....
....	....	1	....	....	....	....	5	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	2	....	....	....	....	....	1	....	....	1
....	....	1	....	....	....	....	7	....	....	....	....	....	1	....	....	1
....	....	....	....	2	....	....	1	5	....	....	....	....	....	....	....	....
....	....	....	....	1	....	....	....	4	....	....	2	4	1	....	6	....
....	....	....	....	3	....	....	1	9	....	....	2	4	1	....	6	....
....	....	....	....	....	....	....	3	3	....	....	....	....	....	....	....	....
....	....	....	....	2	1	....	2	....	....	....	2	1	....	....	4	....
....	....	....	....	2	1	....	5	3	....	....	2	1	....	....	4	....
2	....	....	....	2	....	....	6	6	....	....	....	....	....	....	....	....
1	....	1	....	3	....	....	1	3	....	....	....	3	....	....	6	....
3	....	1	....	5	....	....	7	9	....	....	....	3	....	....	6	....
....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	5	....
....	....	1	....	1	1	....	....	....	....	....	....	....	....	....	5	....
....	....	....	....	....	....	1	1	2	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	1	....	....	....	1	3	1	....	5	....
....	....	....	....	....	....	1	2	2	....	....	1	3	1	....	5	....
2	....	....	....	2	....	....	6	....	....	....	....	....	....	....	....	....
....	1	1	....	1	....	....	3	1	....	....	....	6	....	....	13	....
2	1	1	....	3	....	....	9	1	....	....	....	6	....	....	13	....

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS IV.—*Continued.* O. 3.—DEV. DIS. OLD PEOPLE.—*Geratici.* Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	CLASS V.—VIOLENCE TENDING ORDER 1.—ACCIDENT Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Oxford:											
Males	1	31	47	3	.....	.....	.....	.....	.....	1	.....
Females	1	20	34	.....	.....	.....	.....	.....	.....	.....	.....
Total	2	51	81	3	.....	.....	.....	.....	.....	1	.....
Peel:											
Males	.....	14	20	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	13	17	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	27	37	.....	.....	.....	.....	.....	.....	.....	.....
Perth:											
Males	.....	22	30	.....	1	.....	.....	.....	.....	.....	.....
Females	.....	22	40	2	.....	.....	.....	.....	1	.....	.....
Total	.....	44	70	2	1	.....	.....	.....	1	.....	.....
Peterborough:											
Males	.....	22	28	.....	.....	1	.....	.....	.....	.....	.....
Females	.....	15	27	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	37	55	.....	.....	1	.....	.....	.....	.....	.....
Prescott and Russell:											
Males	.....	18	34	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	16	34	4	.....	.....	.....	.....	.....	.....	.....
Total	.....	34	68	4	.....	.....	.....	.....	.....	.....	.....
Prince Edward:											
Males	.....	20	24	.....	.....	.....	.....	.....	.....	2	.....
Females	2	15	21	.....	.....	.....	.....	.....	.....	1	.....
Total	2	35	45	.....	.....	.....	.....	.....	.....	3	.....
Renfrew:											
Males	.....	15	19	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	11	22	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	26	41	.....	.....	.....	.....	.....	.....	.....	.....
Simcoe:											
Males	.....	28	38	2	.....	.....	.....	.....	2	.....	.....
Females	.....	24	50	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	52	88	2	.....	.....	.....	.....	2	.....	.....

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*													
and Negligence.					Order 2. Homicide	Order 3.—Suicide.—*Autophonici.*				Order 4. Execut'n.			
						Suicide.							
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total Number of Deaths.
......	3	1	5	2	....	......	2	......	......	....	17	9	298
......	......	......	2	......	....	......	......	......	......	....	2	14	263
......	3	1	7	2	....	......	2	......	......	....	19	23	561
1	......	1	4	1	....	......	......	......	......	....	7	5	129
......	......	......	......	......	....	......	......	......	......	....	......	9	134
1	......	1	4	1	....	......	......	......	......	....	7	14	263
......	4	......	10	2	....	......	......	......	......	....	17	6	233
......	......	......	......	......	....	......	......	......	......	....	3	17	207
......	4	......	10	2	....	......	......	......	......	....	20	23	440
......	4	2	4	......	....	......	......	......	......	....	11	5	214
......	......	......	......	......	....	......	......	1	......	....	1	11	195
......	4	2	4	......	....	......	......	1	......	....	12	16	409
......	1	......	4	......	2	......	......	......	......	....	7	10	192
......	1	1	......	......	2	......	......	......	......	....	8	9	199
......	2	1	4	......	4	......	......	......	......	....	15	19	391
......	2	......	4	......	....	......	......	......	......	....	8	5	121
......	......	......	1	......	....	......	......	......	......	....	2	9	129
......	2	......	5	......	....	......	......	......	......	....	10	14	250
......	5	......	3	2	....	1	......	......	......	....	11	5	161
......	......	......	1	......	....	......	......	......	......	....	1	9	160
......	5	......	4	2	....	1	......	......	......	....	12	14	321
1	......	......	9	3	....	......	......	......	......	....	17	16	320
1	2	......	1	......	....	......	......	......	......	....	4	16	290
2	2	......	10	3	....	......	......	......	......	....	21	32	610

TABLE F.—DEATHS BY COUNTIES.—

CLASS I.—ZYMOTIC

ORDER 1.—MIASMATIC

COUNTIES.	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Stormont, Dundas and Glengarry:											
Males	1	2	......	1	4	......	1	8	4	......	......
Females	......	1	......	2	2	......	1	6	2	......	......
Total	1	3	......	3	6	......	2	14	6	......	......
Victoria:											
Males	......	2	1	1	6	1	......	1	3	......	......
Females	......	......	......	4	2	......	......	5	1	......	......
Total	......	2	1	5	8	1	......	6	4	......	......
Waterloo:											
Males	......	4	1	4	13	......	2	10	1	......	......
Females	......	6	3	5	7	......	2	4	1	......	......
Total	......	10	4	9	20	......	4	14	2	......	......
Welland:											
Males	......	4	......	1	2	......	......	4	2	......	......
Females	......	1	......	1	1	......	......	3	1	......	......
Total	......	5	......	2	3	......	......	7	3	......	......
Wellington:											
Males	......	3	......	3	2	......	1	14	4	......	......
Females	......	1	1	2	9	......	1	8	1	......	......
Total	......	4	1	5	11	......	2	22	5	......	......
Wentworth:											
Males	......	20	......	10	26	1	4	17	2	......	......
Females	......	15	......	8	12	......	1	9	......	......	......
Total	......	35	......	18	38	1	5	26	2	......	......
York:											
Males	......	32	2	18	39	2	12	45	13	......	......
Females	......	31	3	7	41	2	9	40	10	......	......
Total	......	63	5	25	80	4	21	85	23	......	......
Total Males	4	166	22	140	261	10	59	368	82	2	6
" Females	......	146	18	127	210	9	44	341	45	......	11
Grand Total	4	312	40	267	471	19	103	709	127	2	17

CAUSES OF DEATH, 1883.

DISEASES, *Zymotici.*

DISEASES, *Miasmatici.*														ORDER 2.—ENTHETIC OR INOCULATED DISEASES, *Enthetici.*
Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
1	......	......	1	2	1	1	......	......	1	2	4	......	......	....
2	......	......	......	......	......	1	......	......	2	1	4	......	......	....
3	......	......	1	2	1	2	......	......	3	3	8	......	......	....
3	......	......	......	3	......	......	6	......	1	1	2	......	......	....
5	......	1	......	1	......	......	4	......	3	2	3	......	......	....
8	......	1	......	4	......	......	10	......	4	3	5	......	......	....
1	......	......	......	1	......	......	10	......	3	1	3	......	......	....
......	......	......	1	5	......	......	3	......	1	......	3	......	......	....
1	......	......	1	6	......	......	13	......	4	1	6	......	......	....
1	......	......	......	4	......	......	......	......	......	......	5	......	......	....
2	......	......	1	3	1	......	1	......	1	1	8	......	......	....
3	......	......	1	7	1	......	1	......	1	1	13	......	......	....
1	......	1	1	9	......	......	......	......	3	......	8	......	......	....
2	......	......	......	9	......	......	......	......	4	3	7	......	......	....
3	......	1	1	18	......	......	......	......	7	3	15	......	......	....
2	......	1	......	5	......	2	6	......	3	4	10	......	......	....
4	......	2	1	14	......	......	2	......	1	1	7	......	......	2
6	......	3	1	19	......	2	8	......	4	5	17	......	......	2
13	......	......	1	48	1	......	21	......	9	4	28	1	......	3
4	......	......	3	41	......	......	13	1	12	12	19	......	......	2
17	......	......	4	89	1	......	34	1	21	16	47	1	......	5
69	4	7	10	249	5	32	89	11	56	45	205	3	3	5
64	6	11	18	220	1	27	88	4	67	58	200	6	1	6
133	10	18	28	469	6	59	177	15	123	103	405	9	4	11

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARASITIC DISEASES.—*Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets).	Apthæ (Thrush).	Tænia Solum (Tape-worm).	Vermes (Worms).	Total Zymotic Diseases.
Stormont, Dundas and Glengarry:											
Males	1		1	1							37
Females											24
Total	1		1	1							61
Victoria:											
Males											31
Females											31
Total											62
Waterloo:											
Males											54
Females			1								42
Total			1								96
Welland:											
Males											23
Females											25
Total											48
Wellington:											
Males				1					1		52
Females				1							49
Total				2					1		101
Wentworth:											
Males	1		1								115
Females			1								80
Total	1		2								195
York:											
Males	1		4	3				6			306
Females	3		1	2				3			259
Total	4		5	5				9			565
Total Males	9	1	9	20			2	15	1	9	1979
" Females	4		3	4			4	9		7	1758
Grand Total	13	1	12	24			6	24	1	16	3737

CAUSES OF DEATHS, 1883—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

Order 1.—Diathetic Diseases.—*Diathetici.*											Order 2.—Tubercular Disease.—*Phthisici.*		
Anæmia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythæmia.	Mortificacio (Mortification).	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
27	1	......	......	11	......	......	......	......	......	1	......	3	2
13	3	......	1	7	......	......	......	......	......	1	1	1	......
40	4	......	1	18	......	......	......	......	......	2	1	4	2
12	5	......	3	2	......	1	......	......	......	2	......	2	......
12	3	......	......	7	......	......	......	......	1	2	4	2	......
24	8	......	3	9	......	1	......	......	1	4	4	4	......
10	8	......	......	4	......	......	......	......	......	......	......	1	1
10	6	......	......	6	1	......	......	......	......	4	1	1	......
20	14	......	......	10	1	......	......	......	......	4	1	2	1
6	2	......	......	4	......	......	1	......	......	......	1	......	......
8	5	......	......	5	......	......	......	......	......	......	......	1	......
14	7	......	......	9	......	......	1	......	......	......	1	1	......
32	8	......	2	3	......	......	......	......	......	2	......	......	......
35	6	......	1	6	......	......	......	......	......	2	2	1	......
67	14	......	3	9	......	......	......	......	......	4	2	1	......
33	6	......	3	14	1	4	......	......	......	7	3	5	1
34	6	......	3	16	......	......	......	......	......	3	3	5	......
67	12	......	6	30	1	4	......	......	......	10	6	10	1
112	10	......	4	23	......	1	......	......	1	6	10	18	1
99	14	......	2	15	1	......	......	......	1	10	5	11	1
211	24	......	6	38	1	1	......	......	2	16	15	29	2
882	172	......	44	193	1	17	6	......	2	79	104	46	6
718	202	1	26	210	5	6	6	......	2	73	83	36	6
1600	374	1	70	403	6	23	12	......	4	152	187	82	12

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS II.—*Continued.*				CLASS III.—LOCAL							
	ORDER 2—*Continued.*				ORDER 1.—DISEASES OF THE							
	Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Stormont, Dundas and Glengarry:												
Males	40	......	......	85	2	......	......	4	3	1	......	....
Females	39	......	......	66	2	......	......	3	.....	......	......	....
Total	79	......	......	151	4	......	......	7	3	1	......	....
Victoria:												
Males	15	......	......	42	3	......	......	6	......	1	......	....
Females	29	......	......	60	2	......	....	6	2	3	......	....
Total	44	......	......	102	5	......	......	12	2	4	......	....
Waterloo:												
Males	22	1	1	48	8	......	1	20	2	......	......	....
Females	28	2	1	60	8	......	......	11	1	......	......	....
Total	50	3	2	108	16	......	1	31	3	......	......	....
Welland:												
Males	11	1	......	26	1	......	......	10	1	......	......	....
Females	20	1	......	40	1	......	......	9	.....	......	......	....
Total	31	2	......	66	2	......	......	19	1	......	......	....
Wellington:												
Males	39	......	......	86	10	1	......	5	1	1	......	....
Females	47	......	.....	100	3	1	......	7	1	3	......	....
Total	86	......	......	186	13	2	......	12	2	4	......	....
Wentworth:												
Males	74	......	......	151	9	......	......	17	4	4	3	....
Females	64	......	3	137	15	.....	......	13	4	1	3	....
Total	138	......	3	288	24	......	.....	30	8	5	6	....
York:												
Males	120	1	1	308	28	1	......	63	4	6	......	....
Females	162	2	4	327	22	1	1	46	10	5	......	....
Total	282	3	5	635	50	2	1	109	14	11	......	....
Total Males	1121	31	11	2715	230	7	2	309	71	43	6	....
" Females	1379	31	12	2796	171	2	3	239	67	37	5	2
Grand Total	2500	62	23	5511	401	9	5	548	138	80	11	2

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane Lining Heart.)	Epistaxis (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
....	....	6	2	....	5	....	....	....	....	....	....	....	....	....	....	1	....
....	....	3	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....
....	....	9	2	....	9	....	....	....	....	....	....	....	....	....	....	1	....
....	....	5	....	3	5	....	....	....	....	....	....	....	....	....	....	....	....
....	....	3	1	....	4	....	....	....	....	....	....	....	....	....	....	....	....
....	....	8	1	3	9	....	....	....	....	....	....	....	....	....	....	....	....
....	....	4	2	....	6	....	....	....	....	....	....	....	....	....	....	....	....
1	....	6	1	....	1	....	....	....	....	....	....	....	....	....	....	2	....
1	....	10	3	....	7	....	....	....	....	....	....	....	....	....	....	2	....
1	....	3	....	....	6	....	....	....	....	....	....	....	....	....	....	1	....
....	....	4	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....
1	....	7	....	....	11	....	....	....	....	....	....	....	....	....	....	1	....
....	....	7	....	....	10	....	....	....	....	....	....	....	....	....	....	....	....
....	....	8	2	....	12	....	....	....	....	....	1	....	....	....	....	....	....
....	....	15	2	....	22	....	....	....	....	....	1	....	....	....	....	....	....
2	....	27	....	1	10	....	....	....	....	....	....	....	2	....	....	3	....
2	....	17	1	....	8	....	....	....	....	1	....	....	....	....	....	2	....
4	....	44	1	1	18	....	....	....	....	1	....	....	2	....	....	5	....
2	2	44	5	6	25	2	....	....	3	....	....	....	....	1	....	....	....
2	1	27	1	....	19	....	....	....	....	1	....	....	1	....	....	....	....
4	3	71	6	6	44	2	....	....	3	1	....	....	1	1	....	....	....
17	6	227	35	31	232	6	6	1	3	1	5	2	5	4	2	18	4
11	2	177	35	18	177	3	2	4	....	5	4	3	2	3	....	26	4
28	8	404	70	49	409	9	8	5	3	6	9	5	7	7	2	44	8

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.											
	ORDER 2—*Continued.*					ORDER 3.—DISEASES OF THE RESPIRATORY SYS-						
	Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Stormont, Dundas and Glengarry:												
Males	5	...	...	1	...	6	6	...	...	...	1	...
Females	11	...	...	...	...	4	2	1	...	...	1	...
Total	16	...	...	1	...	10	8	1	...	...	2	...
Victoria:												
Males	7	...	...	...	...	3	5	1	...	...	...	2
Females	6	...	...	...	...	5	6	...	...	...	2	...
Total	13	...	...	...	...	8	11	1	...	...	2	2
Waterloo:												
Males	10	...	...	...	...	3	5	...	...	...	...	...
Females	18	...	...	...	...	2	6	...	...	...	...	1
Total	28	...	...	...	...	5	11	...	...	...	...	1
Welland:												
Males	6	...	...	...	...	4	7	...	...	...	...	...
Females	11	...	...	...	...	6	6	...	...	...	1	...
Total	17	...	...	...	...	10	13	...	...	...	1	...
Wellington:												
Males	17	...	...	...	...	10	8	...	...	...	1	3
Females	17	...	...	...	...	13	7	...	...	...	1	...
Total	34	...	...	...	...	23	15	...	...	...	2	3
Wentworth:												
Males	39	...	...	...	...	13	17	...	...	...	3	1
Females	31	...	...	...	...	10	37	1	...	...	...	...
Total	70	...	...	...	...	23	54	1	...	...	3	1
York:												
Males	45	4	1	...	...	41	52	...	...	...	2	3
Females	51	...	1	3	...	28	42	3	...	...	3	1
Total	96	4	2	3	...	69	94	3	...	...	5	4
Total Males	443	5	1	2	...	228	246	5	1	...	19	38
Females	478	2	2	4	...	208	251	5	...	...	16	15
Grand Total	921	7	3	6	...	436	497	10	1	...	35	53

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleura-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	7	......	....	....	....	....	1	5	......	1	.....	1	3	......	1	....
......	6	.....	....	....	....	1	....	4	......	2	......	......	3	......	......	......
......	13	......	....	....	....	1	1	9	......	3	......	1	6	.....	1	......
......	12	.....	....	....	....	....	1	3	......	1	......	.....	......	......	......	.....
......	13	......	....	....	....	....	1	4	......	2	......	......	......	......	.....	......
.....	25	.....	....	....	....	....	2	7	......	3	......	......	......	......	......	......
.....	20	......	....	....	....	....	....	8	......	3	......	......	2	......	......	......
......	11	......	....	....	....	....	....	7	......	1	......	......	5	......	......	......
......	31	......	....	....	....	....	....	15	......	4	......	......	7	......	......	......
......	12	......	1	....	....	....	....	6	......	1	......	....	4	......	1	......
......	16	.....	....	....	1	....	....	4	......	1	......	......	1	......	......	......
......	28	......	1	....	1	....	....	10	......	2	......	......	5	......	1	....
......	34	......	....	....	....	....	1	8	1	4	......	......	......	......	2	......
......	30	......	....	....	....	....	....	8	......	2	......	......	3	2	1	......
......	64	......	....	....	....	....	1	16	1	6	......	......	3	2	3	......
......	50	......	....	....	....	....	....	11	......	2	......	......	9	2	1	.....
......	37	......	....	....	....	....	1	10	......	4	......	......	2	.....	......	1
......	87	.....	....	....	....	....	1	21	......	6	.....	......	11	2	1	1
......	105	......	1	1	4	....	3	22	......	12	1	......	10	3	2	2
......	75	......	1	1	6	1	1	22	......	10	......	......	4	2	4	1
......	180	......	2	2	10	1	4	44	......	22	1	......	14	5	6	3
......	737	......	4	2	9	3	31	235	1	70	2	3	76	25	23	3
......	598	......	5	3	12	3	16	207	......	56	1	......	63	10	23	5
......	1335	......	9	5	21	6	47	442	1	126	3	3	139	35	46	8

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.—									
	ORDER 4—*Continued.*									
	Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestina (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Stormont, Dundas and Glengarry:										
Males	1	......	......	......	......	......	......	......	......	......
Females	......	......	......	2	......	1	......	......	......	......
Total	1	......	......	2	......	1	......	......	......	......
Victoria:										
Males	......	......	......	......	......	......	1	......	......	......
Females	......	......	......	1	......	......	......	......	......	......
Total	......	......	......	1	......	......	1	......	......	......
Waterloo:										
Males	......	......	......	1	......	1	......	......	......	......
Females	......	......	......	2	......	......	......	......	......	......
Total	......	......	......	3	......	1	......	......	......	......
Welland:										
Males	1	......	......	2	......	......	1	......	......	......
Females	......	......	......	2	......	......	......	......	......	......
Total	1	......	......	4	......	......	1	......	......	......
Wellington:										
Males	1	......	......	......	......	......	1	......	......	......
Females	1	......	......	2	1	......	1	......	......	......
Total	2	......	......	2	1	......	2	......	......	......
Wentworth:										
Males	1	1	......	3	......	2	......	......	......	1
Females	1	......	......	5	1	......	......	......	......	2
Total	2	1	......	8	1	2	......	......	......	3
York:										
Males	3	......	......	14	1	1	......	......	......	3
Females	1	......	......	23	......	......	......	......	1	......
Total	4	......	......	37	1	1	......	......	1	3
Total Males	18	1	......	60	5	5	4	2	3	17
" Females	12	......	1	73	3	3	5	......	4	16
Grand Total	30	1	1	133	8	8	9	2	7	33

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*									Order 6.—Diseases of the Generative Organs.—*Genetici.*						
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
.....	2	1	.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	2	1	.....	2	.....	1	2	.....	.....	.....	.....	.....	.....	1	.....
.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	2	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	2	.....	.....	.....	1	5	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....
.....	1	2	.....	.....	.....	1	5	.....	.....	.....	1	1	.....	.....	.....
.....	1	.....	1	.....	1	2	4	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	1	.....
.....	1	1	1	.....	1	3	5	.....	.....	.....	.....	.....	.....	1	.....
.....	1	.....	.....	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	.....	.....	2	.....	.....	.....	.....	.....	2	.....	1	1
.....	1	2	.....	1	.....	3	1	.....	.....	.....	.....	2	.....	1	1
.....	2	3	1	.....	1	7	.....	.....	1	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	.....	.....	3	4	.....	.....	.....	1	1	.....	2	.....
.....	3	3	1	.....	1	10	4	.....	1	.....	1	1	.....	2	.....
2	6	1	1	1	1	11	13	1	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	.....	.....	13	12	.....	.....	.....	1	2	.....	2	9
2	6	3	1	1	1	24	25	1	.....	.....	1	2	.....	2	9
8	52	40	10	21	4	74	76	2	2	.....	.....	.....	.....	.....	.....
2	2	20	1	1	.....	44	45	.....	.....	3	21	14	.....	19	14
10	54	60	11	22	4	118	121	2	2	3	21	14	.....	19	14

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS III.—*Continued.*										
	Order 7.—Diseases of the Locomotive System.—*Myostici.*							Order 8.—Diseases of the Integumentary System.—*Chrotici.*			
	Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Leeds and Grenville:											
Males	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	72
Females	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	53
Total	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	125
Lennox and Addington:											
Males	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	63
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	66
Total	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	129
Lincoln:											
Males	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	108
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86
Total	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	194
Middlesex:											
Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78
Females	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	73
Total	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	151
Muskoka and Parry Sound:											
Males	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	135
Females	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	136
Total	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	271
Norfolk:											
Males	1	.....	1	.....	.....	1	.....	3	.....	1	260
Females	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	223
Total	1	.....	1	.....	1	1	.....	3	.....	1	483
Northumberland & Durham:											
Males	.....	.....	1	.....	1	1	.....	11	.....	2	581
Females	.....	.....	1	.....	.....	.....	1	9	.....	1	475
Total	.....	.....	2	.....	1	1	1	20	.....	3	1056
Ontario:											
Males	2	.....	7	1	1	2	1	60	.....	5	3968
Females	.....	.....	5	.....	3	.....	2	45	.....	1	3344
Total	2	.....	12	1	4	2	3	105	.....	6	7312

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Hæmorrhagia Umbilicalis (Umbilical Hæmorrhage).	Natus Præter Naturam (Preternatural Birth).	Partus Emortuus (Still Birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life).	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
......	......	......	1	......	......	2	3	......	......	......	......	......	......	......	......	......
......	......	......	1	......	......	1	1	......	......	......	2	1	......	......	2	......
......	......	......	2	......	......	3	4	......	......	......	2	1	......	......	2	......
......	......	......	......	......	......	2	......	......	......	......	......	......	......	......	......	......
......	......	......	......	2	......	1	......	......	......	......	......	3	......	......	4	......
......	......	......	......	2	......	3	......	......	......	......	......	3	......	......	4	......
......	......	......	......	......	......	2	6	1	......	......	......	......	......	......	......	......
......	......	......	3	......	......	1	6	1	......	......	3	2	......	......	5	......
......	......	......	3	......	......	3	12	2	......	......	3	2	......	......	5	......
......	......	......	......	......	......	......	2	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	2	......	1	......	1	2	1	......	4	......
......	......	......	......	......	......	......	4	......	1	......	1	2	1	......	4	......
......	......	......	3	2	......	8	2	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	7	3	......	......	1	1	5	......	......	8	......
......	......	......	3	2	......	15	5	......	......	1	1	5	......	......	8	......
......	1	......	2	......	......	34	18	1	......	......	......	......	......	......	......	......
......	2	1	1	......	......	30	10	......	......	......	2	8	2	......	4	1
......	3	1	3	......	......	64	28	1	......	......	2	8	2	......	4	1
1	3	1	13	......	......	43	43	2	......	......	......	......	......	......	......	......
......	3	1	5	1	......	37	22	1	......	2	5	29	5	......	9	......
1	6	2	18	1	......	80	65	3	......	2	5	29	5	......	9	......
4	19	3	78	8	4	196	152	10	......	......	......	......	......	......	......	......
8	17	6	72	10	3	137	116	6	6	6	44	104	14	3	193	4
12	36	9	150	18	7	333	268	16	6	6	44	104	14	3	193	4

TABLE F.—DEATHS BY COUNTIES.—

COUNTIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.* Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	CLASS V.—VIOLENCE TENDING — Order 1.—Accident. Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Stormont, Dundas and Glengarry:											
Males	1	39	46	3	...	...	...	...	...	...	...
Females	...	34	42	...	...	...	...	...	1	...	...
Total	1	73	88	3	...	...	...	...	1	...	...
Victoria:											
Males	...	17	19	4	...	...	...	...	1	...	1
Females	...	11	'21	...	...	...	...	...	...	...	...
Total	...	28	40	4	...	...	...	...	1	...	1
Waterloo:											
Males	...	16	25	1	...	...	...	...	2	...	...
Females	...	28	49	...	...	...	...	...	1	...	...
Total	...	44	74	1	...	...	...	...	3	...	...
Welland:											
Males	...	10	12	1	...	...	1	...	...	1	...
Females	...	11	22	...	...	...	...	...	...	...	...
Total	...	21	34	1	...	...	1	...	...	1	...
Wellington:											
Males	1	28	44	2	...	...	1	...	...	1	...
Females	...	34	59	...	...	...	...	...	...	...	...
Total	1	62	103	2	...	...	1	...	...	1	...
Wentworth:											
Males	1	29	86	...	...	...	2	...	2	1	...
Females	...	36	97	1	...	...	...	...	...	...	...
Total	1	65	183	1	...	...	2	...	2	1	...
York:											
Males	1	59	166	2	...	...	2	...	3	2	1
Females	1	54	175	7	...	...	...	...	...	...	...
Total	2	113	341	9	...	...	2	...	3	2	1
Total Males	16	854	1344	29	3	6	8	3	17	15	4
" Females	6	877	1632	30	...	...	...	...	7	2	...
Grand Total	22	1731	2976	59	3	6	8	3	24	17	4

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*

and Negligence.					Order 2. Homicide.	Order 3.—Suicide.—*Autophonici.* Suicide.				Order 4. Execut'n.			
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not specified.	Total Number of Deaths.
......	3	......	7	1	....	1	......	......	......	....	15	16	271
......	......	......	1	......	....	......	......	......	......	....	2	19	206
......	3	......	8	1	....	1	......	......	......	....	17	35	477
1	2	......	6	......	....	......	......	......	......	....	15	7	177
......	......	1	......	......	....	......	......	......	......	....	1	7	186
1	2	1	6	......	....	......	......	......	......	....	16	14	363
1	2	......	4	1	....	......	......	......	......	....	11	4	250
......	......	1	......	......	....	......	......	......	......	....	2	4	243
1	2	1	4	1	....	......	......	......	......	....	13	8	493
2	3	1	3	4	....	......	......	......	......	....	16	1	156
......	......	......	1	......	....	......	......	......	......	....	1	1	162
2	3	1	4	4	....	......	......	......	......	....	17	2	318
2	3	......	15	1	....	......	......	......	......	....	25	12	354
......	......	......	......	......	....	......	......	......	1	....	1	15	360
2	3	......	15	1	....	......	......	......	1	....	26	27	714
2	7	......	7	4	....	......	......	......	2	....	27	16	655
1	1	......	3	......	1	......	......	1	......	....	8	13	558
3	8	......	10	4	1	......	......	1	2	....	35	29	1213
1	23	1	17	7	....	......	......	2	2	....	63	21	1445
......	1	......	4	......	....	......	......	1	....	....	13	32	1281
1	24	1	21	7	....	......	......	3	2	....	76	53	2726
14	162	14	238	73	5	3	5	4	13	1	617	330	10953
8	20	9	42	9	5	3	2	6	3	....	146	420	10096
22	182	23	280	82	10	6	7	10	16	1	763	750	21049

H. S. CREWE,
Inspector.

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS I.—ZYMOTIC										
	ORDER 1.—MIASMATIC										
	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Toronto:											
Males	......	21	1	15	31	2	11	31	11	......	......
Females	......	20	2	5	35	2	7	27	10	......	......
Total	......	41	3	20	66	4	18	58	21	......	......
Hamilton:											
Males	......	15	......	7	22	1	3	12	2	......	......
Females	......	11	......	8	11	......	1	6	......	......	......
Total	......	26	......	15	33	1	4	18	2	......	......
Ottawa:											
Males	......	26	......	3	38	......	3	17	4	......	......
Females	......	23	1	5	43	......	2	13	......	......	1
Total	......	49	1	8	81	......	5	30	4	......	1
London:											
Males	......	6	......	1	5	......	......	1	......	......	......
Females	......	3	......	3	6	3	......	1	......	......	......
Total	......	9	......	4	11	3	......	2	......	......	......
Kingston:											
Males	......	1	......	......	......	......	......	......	1	......	......
Females	......	3	......	......	2	......	......	......	......	......	......
Total	......	4	......	......	2	......	......	......	1	......	......
Guelph:											
Males	......	1	......	1	1	......	......	2	1	......	......
Females	......	......	1	1	3	......	......	2	......	......	......
Total	......	1	1	2	4	......	......	4	1	......	......
St. Catharines:											
Males	......	......	......	......	1	......	......	......	2	......	1
Females	......	4	......	2	1	......	......	......	......	......	......
Total	......	4	......	2	2	......	......	......	2	......	1
Brantford:											
Males	......	1	......	4	......	......	1	7	1	......	......
Females	......	......	......	......	......	......	......	11	......	......	......
Total	......	1	......	4	......	......	1	18	1	......	......

CAUSES OF DEATHS, 1883.

DISEASES, *Zymotici*.

DISEASES, *Miasmatici*.														ORDER 2.—ENTHETIC OR INOCULATED DISEASES, *Enthetici*.
Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	Syphilis.
11	......	......	......	37	1	......	8	......	9	4	17	1	......	3
3	......	......	1	37	......	......	9	1	9	11	11	......	......	2
14	......	......	1	74	1	......	17	1	18	15	28	1	......	5
2	......	1	......	4	......	......	5	......	1	1	10	......	......	......
3	......	2	1	7	......	......	1	......	......	......	6	......	......	2
5	.	3	1	11	......	......	6	......	1	1	16	......	......	2
......	......	3	1	12	......	3	......	......	2	......	17	......	......	......
......	......	1	......	11	......	1	......	......	3	......	13	......	......	......
......	......	4	1	23	......	4	......	......	5	......	30	......	......	......
1	......	......	......	6	......	......	......	......	......	1	1	......	......	......
1	......	......	1	5	......	......	1	......	2	1	......	......	......	......
2	......	......	1	11	......	......	1	......	2	2	1	......	......	......
......	......	......	......	4	......	......	5	......	1	4	......	1	......	......
......	......	......	......	1	......	1	5	......	2	1	......	......	......	1
......	......	......	......	5	......	1	10	......	3	5	......	1	......	1
......	......	......	1	......	......	......	......	......	2	......	1	......	......	......
......	......	......	......	......	......	......	......	......	2	2	1	......	......	......
......	......	......	1	......	......	......	......	......	4	2	2	......	......	......
......	......	......	......	3	......	......	......	......	......	2	......	......	......	......
......	......	......	......	1	......	......	......	......	......	1	......	......	......	......
......	......	......	......	4	......	......	......	......	......	3	......	......	......	......
......	......	......	......	2	......	......	......	......	1	......	......	......	......	......
1	......	......	......	1	......	......	1	......	......	......	......	......	......	......
1	......	......	......	3	......	......	1	......	1	......	......	......	......	......

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dictici.*							ORDER 4.—PARASITIC DISEASES.—*Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets.)	Apthæ (Thrush).	Tænia Solum (Tape-worm).	Vermes (Worms).	Total Zymotic Diseases.
Toronto:											
Males	1		4	3				4			226
Females	3		1	1				3			200
Total	4		5	4				7			426
Hamilton:											
Males	1		1								88
Females			1								60
Total	1		2								148
Ottawa:											
Males		1		1				4			135
Females											117
Total		1		1				4			252
London:											
Males											22
Females					2						29
Total					2						51
Kingston:											
Males	1										18
Females											16
Total	1										34
Guelph:											
Males											10
Females											12
Total											22
St. Catharines:											
Males											9
Females	1										10
Total	1										19
Brantford:											
Males											17
Females											14
Total											31

CAUSES OF DEATHS, 1883—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

Order 1.—Diathetic Diseases.—*Diathetici.*											Order 2.—Tubercular Disease.—*Phthisici.*		
Anæmia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythæmia.	Mortificatio (Mortification).	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
85	7	.....	3	15	.....	1	.....	1	.....	5	7	16	.....
85	10	.....	1	9	1	.....	.....	.....	.....	6	4	11	1
170	17	.....	4	24	1	1	.....	1	.....	11	11	27	1
25	3	.....	3	9	1	4	.....	.....	.....	4	2	3	1
27	3	.....	2	6	.....	.....	.....	.....	.....	2	2	4	.....
52	6	.....	5	15	1	4	.....	.....	.....	6	4	7	1
89	10	.....	.....	8	.....	1	.....	.....	.....	3	41	.....	.....
58	9	.....	2	11	.....	.....	.....	.....	.....	2	28	.....	1
147	19	.....	2	19	.....	1	.....	.....	.....	5	69	.....	1
8	1	.....	.....	5	.....	.....	.....	.....	.....	2	5	.....	.....
10	3	.....	.....	7	.....	.....	.....	.....	.....	2	4	.....	.....
18	4	.....	.....	12	.....	.....	.....	.....	.....	4	9	.....	.....
17	1	.....	.....	7	.....	1	.....	.....	.....	1	1	1	.....
12	1	.....	2	2	.....	.....	.....	.....	.....	.....	1	.....	.....
29	2	.....	2	9	.....	1	.....	.....	.....	1	2	1	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	.....
19	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	.....
6	1	.....	1	4	.....	.....	.....	.....	.....	2	1	1	.....
3	2	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
9	3	.....	1	5	.....	.....	.....	.....	.....	3	1	1	.....
6	1	.....	.....	1	.....	.....	.....	.....	.....	1	.....	1	.....
2	4	.....	.....	4	.....	.....	.....	.....	.....	.....	1	.....	.....
8	5	.....	.....	5	.....	.....	.....	.....	.....	1	1	1	.....

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS II.—*Continued.* Order 2—*Continued.* Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	CLASS III.—LOCAL. Order 1.—Diseases of the Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Toronto:												
Males	85	1	1	227	23	......	......	50	2	5	......	....
Females	132	2	4	266	19	1	1	34	7	3	......	....
Total	217	3	5	493	42	1	1	84	9	8	......	....
Hamilton:												
Males	53	......	......	108	6	......	......	12	2	3	2	....
Females	44	......	2	92	11	......	......	10	3	1	3	....
Total	97	......	2	200	17	......	......	22	5	4	5	....
Ottawa:												
Males	57	20	......	229	8	......	......	9	15	1	......	....
Females	57	20	......	188	5	......	1	4	6	......	......	....
Total	114	40	......	417	13	......	1	13	21	1	......	....
London:												
Males	14	......	2	37	5	......	......	8	1	1	......	....
Females	13	1	......	40	2	......	......	7	3	......	......	....
Total	27	1	2	77	7	......	......	15	4	1	......	....
Kingston:												
Males	26	1	......	56	1	1	......	3	......	1	......	....
Females	27	......	......	45	4	......	......	5	......	......	......	....
Total	53	1	......	101	5	1	......	8	......	1	......	....
Guelph:												
Males	10	......	......	20	2	......	......	......	......	1	......	....
Females	12	......	......	24	1	......	......	2	......	1	......	....
Total	22	......	......	44	3	......	......	2	......	2	......	....
St. Catharines:												
Males	16	......	......	32	2	......	......	......	3	1	......	....
Females	11	......	......	18	2	......	......	2	......	1	......	....
Total	27	......	......	50	4	......	......	2	3	2	......	....
Brantford:												
Males	9	......	......	19	8	......	......	5	......	......	......	....
Females	11	......	......	22	2	......	......	1	......	......	......	....
Total	20	......	......	41	10	......	......	6	......	......	......	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane lining Heart).	Epistaxis (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
2	1	37	4	5	15	2	....	....	3	....	.....	.....	.....	.....	....	.....	.....
1	1	24	1	.....	9	..	....	....	....	1	.....	.....	1	.....	....	.....	.....
3	2	61	5	5	24	2	....	....	3	1	.....	.....	1	.....	....	.....	.....
....	....	20	.....	.....	1	.....	....	....	....	....	.....	.....	2	.....	....	.....	3
1	....	13	.....	.....	2	.....	....	....	....	....	.....	.....	.....	.....	....	.....	2
1	....	33	.....	.....	3	.....	....	....	....	....	.....	.....	2	.....	....	.....	5
....	....	20	.....	.....	9	.....	....	1	....	....	.....	.....	.....	.....	....	.....	.....
1	....	12	1	.....	9	.....	....	2	....	....	.....	.....	.....	.....	....	.....	.....
1	....	32	1	.....	18	.....	....	3	....	....	.....	.....	.....	.....	....	.....	.....
....	....	4	.....	1	2	.....	....	....	....	....	.....	.....	1	.....	....	.....	.....
....	....	.....	.....	1	4	.....	....	....	....	....	.....	.....	.....	.....	....	.....	1
....	....	4	.....	2	6	.....	....	....	....	....	.....	.....	1	.....	....	.....	1
....	....	1	2	.....	....	.....	....	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	2	.....	2	2	.....	....	....	....	....	.....	.....	1	.....	....	.....	.....
....	....	3	2	2	2	.....	....	....	....	....	.....	.....	1	.....	....	.....	.....
....	....	2	.....	.....	3	.....	....	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	1	.....	.....	2	.....	....	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	3	.....	.....	5	.....	....	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	4	.....	.....	....	.....	....	....	....	....	.....	.....	.....	1	....	.....	1
....	....	.....	.....	1	1	.....	.	....	....	....	1	.....	.....	.....	....	.....	1
....	....	4	.....	1	1	.....	....	....	....	....	1	.....	.....	1	....	.....	2
....	....	4	.....	.....	2	.....	1	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	5	.....	.....	2	.....	....	....	....	....	.....	.....	.....	.....	....	.....	.....
....	....	9	.....	.....	4	.....	1	....	....	....	.....	.....	.....	.....	....	.....	.....

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.											
	ORDER 2.—*Continued.*					ORDER 3.—DISEASES OF THE RESPIRATORY SYS-						
	Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest.)	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Toronto:												
Males	28	3	1	...	...	27	42	...	...	...	2	3
Females	37	...	1	2	...	15	39	...	2	...	3	1
Total	65	3	2	2	...	42	81	...	2	...	5	4
Hamilton:												
Males	30	...	...	...	...	7	9	...	...	...	3	1
Females	21	...	...	...	...	5	29	...	1	...	...	...
Total	51	...	...	...	...	12	38	...	1	...	3	1
Ottawa:												
Males	16	1	...	...	...	4	7	2	...	...	1	5
Females	25	...	...	...	...	6	9	...	...	...	1	2
Total	41	1	...	...	...	10	16	2	...	...	2	7
London:												
Males	7	...	...	...	...	5	2	...	...	...	...	...
Females	2	...	...	...	...	2	2	...	...	...	...	...
Total	9	...	...	...	...	7	4	...	...	...	...	...
Kingston:												
Males	14	...	...	...	...	8	6	...	...	...	1	...
Females	2	...	...	...	...	6	9	...	...	...	...	...
Total	16	...	...	...	...	14	15	...	...	...	1	...
Guelph:												
Males	4	...	...	...	...	2	1	...	...	...	1	...
Females	5	...	...	...	...	4	...	...	...	...	...	...
Total	9	...	...	...	...	6	1	...	...	...	1	...
St. Catharines:												
Males	6	...	...	...	...	1	5	...	...	...	...	...
Females	4	...	...	1	...	2	3	...	...	...	...	...
Total	10	...	...	1	...	3	8	...	...	...	...	...
Brantford:												
Males	4	...	...	...	...	...	...	...	...	...	...	...
Females	3	...	...	...	...	1	1	...	...	...	...	...
Total	7	...	...	...	...	1	1	...	...	...	...	...

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleura-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	85	......	1	....	4	....	....	12	......	6	1	......	9	2	1	1
......	59	......	1	1	6	1	....	10	......	9	......	......	2	2	3	2
......	144	......	2	1	10	1	....	22	......	15	1	......	11	4	4	3
......	26	......	....	....	....	....	....	5	......	......	......	......	6	2	......	......
......	23	......	....	..	....	....	....	8	......	3	......	......	2	......	1	......
......	49	......	....	....	....	....	....	13	......	3	......	......	8	2	1	......
......	18	......	....	....	....	1	....	11	......	2	......	.. ..	1	......	3	......
......	19	......	....	....	....	1	2	19	......	......	......	......	......	......	1	......
......	37	......	....	....	....	2	2	30	......	2	......	......	1	......	4	......
......	13	......	....	....	....	....	....	3	......	......	......	......	5	......	......	......
......	3	......	....	....	....	....	....	1	......	1	......	......	1	......	......	......
......	16	......	....	....	....	....	....	4	......	1	......	......	6	......	......	......
......	7	......	....	1	....	....	1	4	......	......	......	......	......	1	......	......
......	6	......	....	....	....	....	....	4	......	3	......	......	2	......	1	......
......	13	......	....	1	....	....	1	8	......	3	......	......	2	1	1	... ..
......	4	......	....	....	....	....	1	2	......	1	......	......	......	......	......	......
......	2	......	....	....	....	....	....	......	......	1	......	......	1	......	......	......
......	6	......	....	....	....	....	1	2	......	2	......	......	1	......	......	......
......	9	......	1	....	....	....	1	2	......	1	......	......	......	......	......	......
......	3	......	....	....	....	....	....	......	......	......	......	......	2	......	......	......
......	12	......	1	....	....	....	1	2	......	1	......	......	2	......	......	......
......	7	......	....	....	....	....	....	4	......	1	......	......	1	3	1	......
......	5	......	....	....	....	....	....	......	......	......	......	......	1	......	......	......
......	12	......	....	....	....	....	....	4	......	1	......	......	2	3	1	......

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.— ORDER 4.—*Continued.* Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestina (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Toronto:										
Males	2	.....	.....	11	.....	.....	.....	.....	.....	.....
Females	1	.....	.....	21	.....	.....	.....	.....	1	.....
Total	3	.....	.....	32	.....	.....	.....	.....	1	.....
Hamilton:										
Males	1	1	.....	2	.....	1	.....	.....	.....	.....
Females	1	.....	.....	4	1	.....	.....	.....	.....	.....
Total	2	1	.....	6	1	1	.....	.....	.....	.....
Ottawa:										
Males	1	.....	.....	2	.....	.....	.....	.....	.....	.....
Females	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Total	1	.....	.....	4	.....	.....	.....	.....	.....	.....
London:										
Males	.....	.....	.....	2	1	.....	.....	.....	.....	.....
Females	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Total	.....	.....	.....	2	1	.....	1	.....	.....	1
Kingston:										
Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Females	1	.....	.....	1	.....	.....	.....	.....	.....	1
Total	1	.....	.....	1	.....	.....	.....	.....	.....	1
Guelph:										
Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Total	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
St. Catharines:										
Males	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Females	.....	.....	.....	1	.....	.....	1	.....	.....	.....
Total	.....	.....	.....	1	1	.....	1	.....	.....	1
Brantford:										
Males	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Total	.....	.....	.....	.....	.....	.....	.....	.....	1	.....

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*									Order 6.—Diseases of the Generative Organs.—*Genetici.*						
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor).	Tumor Uteri (Uterine Tumor).
1	4	1	1	...	1	10	9	1	...	...	...	...	...	...	...
...	...	1	...	...	...	12	11	...	...	...	...	2	...	2	9
1	4	2	1	...	1	22	20	1	...	...	...	2	...	2	9
...	2	1	1	...	1	4	...	...	1	...	...	...	...	...	...
...	1	...	...	...	...	2	2	...	...	...	1	1	...	2	...
...	3	1	1	...	1	6	2	...	1	...	1	1	...	2	...
...	3	2	...	...	...	1	3	...	1	...	...	...	...	...	...
...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
...	3	2	...	1	...	1	4	...	1	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...
...	1	...	...	...	...	1	2	...	...	...	...	...	...	...	...
...	1	...	...	...	...	4	3	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...
...	1	...	...	...	...	4	3	...	...	...	2	1	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...
...	...	...	...	...	...	2	1	...	...	...	1	2	...	...	...
...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.—*Continued.*										
	Order 7.—Diseases of the Locomotive System.—*Myostici.*							Order 8.—Diseases of the Integumentary System.—*Chrotici.*			
	Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Toronto:											
Males			1		1			8	2		431
Females			1				1	7	1		368
Total			2		1		1	15	3		799
Hamilton:											
Males	1					1		1		1	159
Females					1						155
Total	1				1	1		1		1	314
Ottawa:											
Males			1					1			150
Females								1			131
Total			1					2			281
London:											
Males											62
Females											35
Total											97
Kingston:											
Males							1	1			62
Females								2			57
Total							1	3			119
Guelph:											
Males								3			27
Females											22
Total								3			49
St. Catharines:											
Males											43
Females								1			30
Total								1			73
Brantford:											
Males											44
Females											22
Total											66

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Hæmorrhagia Umbilicalis (Umbilical Hæmorrhage).	Natus Præter Naturam (Preternatural Birth).	Partus Emortuus (Still Birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life).	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
1	3	1	11	......	......	38	38	2	......	......	......	......	......	......	......	....
......	3	1	5	......	......	32	17	1	......	......	4	22	4	......	3	....
1	6	2	16	......	......	70	55	3	......	......	4	22	4	......	3	....
......	1	....	....	......	......	30	15	....	......	......	......	......	......	......	......	....
......	2	1	1	......	......	30	10	....	......	......	1	5	1	......	3	1
......	3	1	1	......	......	60	25	....	......	......	1	5	1	......	3	1
......	7	....	33	1	......	12	8	....	......	......	......	......	......	......	......	....
......	4	....	37	3	......	15	13	....	......	......	......	1	......	......	10	....
......	11	....	70	4	......	27	21	....	......	......	......	1	......	......	10	....
......	....	....	....	......	......	7	8	....	......	......	......	......	......	......	......	....
......	....	....	....	......	......	2	9	....	......	......	......	......	......	......	1	....
......	....	....	....	......	......	9	17	....	......	......	......	......	......	......	1	....
......	....	....	5	......	......	1	......	....	......	......	......	......	......	......	......	....
......	....	....	4	......	......	4	1	....	......	......	......	2	......	......	......	....
......	....	....	9	......	......	5	1	....	......	......	......	2	......	......	......	....
......	....	....	1	......	......	6	1	....	......	......	......	......	......	......	......	....
......	....	....	....	......	......	5	2	....	......	......	......	1	......	......	2	....
......	....	....	1	......	......	11	3	....	......	......	......	1	......	......	2	....
......	....	....	....	......	......	4	......	....	......	......	......	......	......	......	......	....
......	....	1	....	......	......	2	6	....	......	......	......	1	......	......	......	....
......	....	1	....	......	......	6	6	....	......	......	......	1	......	......	......	....
......	....	....	....	......	......	......	2	1	......	......	......	......	......	......	......	....
......	....	....	....	1	......	......	2	....	......	......	......	1	......	......	......	....
......	....	....	....	1	......	......	4	1	......	......	......	1	......	......	......	....

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.* Gangræna Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	CLASS V.—VIOLENCE TENDING Order 1.—Accident Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Toronto:											
Males	1	29	124	2	.....	2	.....	.....	2	2	.....
Females	.....	30	122	3	.....	.....	.....	.....	.....	.....	.....
Total	1	59	246	5	.....	2	.....	.....	2	2	.....
Hamilton:											
Males	.....	13	59	.....	.....	1	.....	.....	1	1	.....
Females	.....	16	71	1	.....	.....	.....	.....	.....	.....	.....
Total	.....	29	130	1	.....	1	.....	.....	1	1	.....
Ottawa:											
Males	.....	22	83	.....	.....	1	.....	.....	.....	1	.....
Females	.....	27	110	2	.....	.....	.....	.....	.....	.....	.....
Total	.....	49	193	2	.....	1	.....	.....	.....	1	.....
London:											
Males	.....	7	22	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	9	21	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	16	43	.....	.....	.....	.....	.....	.....	.....	.....
Kingston:											
Males	.....	16	22	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	16	27	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	32	49	.....	.....	.....	.....	.....	.....	.....	.....
Guelph:											
Males	.....	6	14	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	5	15	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	11	29	.....	.....	.....	.....	.....	.....	.....	.....
St. Catharines:											
Males	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	5	15	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	5	19	.....	.....	.....	.....	.....	.....	.....	.....
Brantford:											
Males	.....	4	7	.....	.....	.....	.....	.....	.....	1	.....
Females	.....	4	8	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	8	15	.....	.....	.....	.....	.....	.....	1	.....

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*

and Negligence.					Order 2. Homicide.	Suicide.—*Autophonici.* Suicide.				Order 4. Execut'n.			
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera Wounds.	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total Number of Deaths.
1	18	1	12	7	....	....	....	2	1	....	50	7	1065
....	1	....	1	....	....	....	....	1	....	....	6	13	975
1	19	1	13	7	....	....	....	3	1	....	56	20	2040
1	6	....	5	1	....	....	....	....	1	....	17	6	437
1	....	....	....	....	....	....	....	....	....	....	2	5	385
2	6	....	5	1	....	....	....	....	1	....	19	11	822
....	6	....	14	1	....	....	....	....	....	....	23	15	635
....	1	....	4	....	....	....	....	....	....	....	7	23	576
....	7	....	18	1	....	....	....	....	....	....	30	38	1211
....	....	....	1	4	....	....	....	....	1	....	6	....	149
1	....	....	2	....	....	....	....	....	....	....	3	3	131
1	....	....	3	4	....	....	....	....	1	....	9	3	280
....	1	....	9	2	....	....	....	....	1	....	13	39	210
1	....	....	1	....	1	....	....	1	....	....	4	25	174
1	1	....	10	2	1	....	....	1	1	....	17	64	384
....	....	....	2	1	....	....	....	....	....	....	3	1	75
....	....	....	....	....	....	....	....	....	....	....	....	2	75
....	....	....	2	1	....	....	....	....	....	....	3	3	150
....	....	....	....	....	....	....	....	....	....	....	....	4	92
....	....	....	....	....	....	....	....	....	1	....	1	....	74
....	....	....	....	....	....	....	....	....	1	....	1	4	166
....	2	....	1	....	....	....	....	....	....	....	4	1	92
....	....	....	....	....	....	....	....	....	....	....	....	1	67
....	2	....	1	....	....	....	....	....	....	....	4	2	159

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS I.—ZYMOTIC										
	ORDER 1.—MIASMATIC										
	Anthrax (Carbuncle).	Cholera Infantum.	Cholera Morbus.	Cynanche Trachealis (Membranous Croup).	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Entero-Colitis.	Febris Biliosa (Bilious Fever).
Belleville:											
Males	.... .	1	......	1	3	......	......	......	......	......	......
Females	......	2	......	......	2	......	......	......	......	......	......
Total	......	3	......	1	5	......	......	......	......	......	......
St. Thomas:											
Males	.....	4	......	2	1	......	1	......	......	......	......
Females	......	1	......	2	3	......	......	......	......	......	......
Total	......	5	......	4	4	......	1	......	......	......	......
Total Males	......	76	1	34	102	3	19	70	22	......	1
" Females	......	67	4	26	106	5	10	60	10	......	1
Grand Total	......	143	5	60	208	8	29	130	32	......	2

CAUSES OF DEATHS, 1883.

DISEASES, *Zymotici*.

DISEASES, *Miasmatici*.

Febris Cerebro-Spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris (Typhus Fever).	Influenza.	Morbilli (Measles).	Parotitis (Mumps).	Pertussis (Whooping Cough).	Pyæmia.	Scarlatina (Scarlet Fever).	Tonsillitis (Quinsy).	Variola (Small-Pox).	ORDER 2.—ENTHETIC OR INOCULATED DISEASES, *Enthetici*. Syphilis.
.....	.....	.....	.....	2	.....	.....	.....	.....	2	.....	6	.....	.....	.....
.....	.....	.....	1	.....	.....	.....	.....	.....	1	1	7	.....	.....	.....
.....	.....	.....	1	2	.....	.....	.....	.....	3	1	13	.....	.....	.....
.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	4	2	73	1	3	18	.....	18	12	52	2	.....	3
8	1	3	4	64	.....	2	17	1	19	17	38	.....	.....	5
22	1	7	6	137	1	5	35	1	37	29	90	2	.....	8

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS I.—*Continued.*										
	ORDER 3.—DIETIC DISEASES.—*Dietici.*							ORDER 4.—PARSITIC DISEASES.—*Paracitici.*			
	Alcoholism.	Bronchocele.	Delirium Alcoholicum (Delirium Tremens).	Ebriositas (Drunkenness).	Ergotismus.	Purpura.	Rachitis (Rickets).	Apthæ (Thrush).	Tænia Solum (Tape Worm).	Vermes (Worms).	Total Zymotic Diseases.
Belleville:											
Males	......	......	......	......	......	......	......	1	......	1	17
Females	......	......	......	......	......	......	......	......	......	......	14
Total	......	......	......	......	......	......	......	1	......	1	31
St. Thomas:											
Males	......	......	......	......	......	......	......	......	......	......	11
Females	......	......	......	......	......	......	......	......	......	......	8
Total	......	......	......	......	......	......	......	......	......	......	19
Total Males	3	1	5	4	......	......	......	9	......	1	553
" Females	4	......	2	1	2	......	......	3	......	......	480
Grand Total	7	1	7	5	2	......	......	12	......	1	1033

CAUSES OF DEATHS, 1883.—*Continued.*

CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.*

ORDER 1.—DIATHETIC DISEASES.—*Diathetici.*											ORDER 2.—TUBERCULAR DISEASE.—*Phthisici.*		
Anaemia.	Anasarca (General Dropsy).	Arthritis (Articular Rheumatism).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Leucocythaemia.	Mortificacio (Mortification).	Noma (Canker).	Podagra (Gout).	Podagra Rheumatica (Rheumatic Gout).	Rheumatismus (Rheumatism).	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Morbus Coxarius (Hip Disease).
3	......	......	......	1	.....	1	......	......	......	....	1	....	....
3	......	......	......	1	.....	......	......	......	......	1	....	....	....
6	......	......	......	2	......	1	......	......	......	1	1	....	....
3	......	......	......	......	......	......	......	......	......	....	....	....	....
3	......	......	......	......	......	......	......	......	......	1	1	....	....
6	......	......	......	......	......	......	......	......	......	1	1	....	....
252	24	......	7	50	1	8	......	1	......	18	58	22	1
212	32	......	7	43	1	......	......	......	......	15	41	16	2
464	56	......	14	93	2	8	......	1	......	33	99	38	3

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS II.—*Continued.*				CLASS III.—LOCAL							
	ORDER 2—*Continued.*				ORDER 1.—DISEASES OF THE							
	Phthisis Pulmonalis (Consumption).	Scrofula.	Tabes Mesenterica.	Total Constitutional Diseases.	Apoplexia (Apoplexy).	Atropia Musculorum Ingravicens (Progressive Locomotor Ataxia).	Chorea (St. Vitus' Dance).	Convulsio (Convulsions).	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Hysteria.
Belleville:												
Males	13	.....	.....	19	2	.....	.....	2	.....	1	.....	....
Females	27	.....	.....	32	.....	.....	.....	.....	1	.....	.....	....
Total	40	.....	.....	51	2	.....	.....	2	1	1	.....	....
St. Thomas:												
Males	2	.....	.....	5	2	.....	.....	2	.....	.....	.....	....
Females	8	.....	.....	13	3	.....	.....	1	.....	.....	.....	....
Total	10	.....	.....	18	5	.....	.....	3	.....	.....	.....	....
Total Males	285	22	3	752	59	1	.....	91	23	14	2	....
" Females	342	23	6	740	49	1	2	66	20	6	3	....
Grand Total	627	45	9	1492	108	2	2	157	43	20	5	....

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Monorganici.*

Nervous System.—*Cephalici.*									Order 2.—Diseases of the Circulatory System.—*Cardiaci.*								
Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis (Inflammation of Spinal Cord).	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Neuralgia.	Aneurisma (Aneurism).	Angina Pectoris (Breast Pang).	Atrophia Cordis (Atrophy of Heart).	Carditis (Inflammation of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Endocarditis (Inflammation of Membrane lining Heart).	Epistaxis (Nosebleed).	Hydrops Pericardii (Dropsy of Heart).	Hypertrophia Cordis (Enlargement of Heart).
....	.....	4	1	......	3	......	....	....	....	....	......	......	......	......	....	......	......
....	.....	.....	......	......	2	......	....	....	....	....	......	......	......	......	....	......	......
....	.....	4	1	......	5	......	....	....	....	....	......	......	......	......	....	......	......
....	.....	1	......	......	....	......	....	....	....	....	......	......	......	......	....	......	......
....	.....	.....	......	......	....	......	....	....	....	....	......	......	......	......	....	......	......
....	.....	1	......	......	....	......	....	....	....	....	......	......	......	......	....	......	......
2	1	97	7	6	35	2	1	1	3	....	......	......	3	1	....	......	4
3	1	57	2	4	33	......	....	2	....	1	1	.....	2	......	....	......	4
5	2	154	9	10	68	2	1	3	3	1	1	......	5	1	....	......	3

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.											
	ORDER 2—*Continued.*					ORDER 3.—DISEASES OF THE RESPIRATORY SYS-						
	Morbus Valvularum Cordis (Valvular Disease of Heart).	Pericarditis.	Phlebitis (Inflammation of Veins).	Syncope (Fainting).	Varices (Varicose Veins).	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Emphysema.	Empyema.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).
Belleville:												
Males	9	......	......	......	......	5	......	......	......	......	......	...
Females	2	......	......	......	......	5	2	......	......	......	......	...
Total	11	......	......	......	......	10	2	......	......	......	......	...
St. Thomas:												
Males	......	......	......	......	......	1	1	......	......	......	......	...
Females	2	......	......	......	......	2	3	......	......	......	......	...
Total	2	......	......	......	......	3	4	......	......	......	......	...
Total Males	118	4	1	......	......	60	73	2	......	......	8	9
" Females	103	......	1	3	......	48	97	......	3	......	4	3
Grand Total	221	4	2	3	......	108	170	2	3	......	12	12

CAUSES OF DEATHS, 1883—*Continued.*

—*Continued.*

TEM.—*Pneumonici.*			ORDER 4.—DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*													
Pleuro-Pneumonia (Pleurisy and Inflammation of Lungs).	Pneumonia (Inflammation of Lungs).	Other Diseases of the Respiratory Organs.	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis.	Colica (Colic).	Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Fistula.	Gastritis (Inflammation of Stomach).	Hæmatemesis (Blood Vomit).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Intus-susceptio (Invagination of Gut).
......	3	......	....	....	....	....	....	4	......	1	......	......	......	......	......	......
......	1	......	....	....	....	....	....	2	......	......	......	......	1	......	......	.....
......	4	......	....	....	....	....	....	6	......	1	......	......	1	......	......	......
......	4	......	....	....	....	....	....	......	......	......	......	......	......	......	......	......
.....	5	......	....	....	....	....	....	......	......	......	......	......	......	......	......	......
......	9	......	....	....	....	....	....	......	......	......	......	......	......	......	......	......
......	176	......	2	1	4	1	3	47	......	12	1	......	22	8	5	2
......	126	......	1	1	6	2	2	44	......	17	......	......	12	2	6	1
... ..	302	......	3	2	10	3	5	91	......	29	1	......	34	10	11	3

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.— ORDER 4—*Continued.*									
	Obstipatio (Constipation).	Œsophagitis (Inflammation of Gullet).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Splenitis (Inflammation of Spleen).	Stomatitis (Inflammation of Mouth).	Strictura Intestini (Stricture of Intestine).	Typhlitis.	Ulceratio Intestini (Ulceration of Intestines).	Ulcer of Stomach.
Belleville:										
Males	......	......	......	......	......	......	......	......	......	......
Females	......	......	......	......	......	......	......	......	......	......
Total	......	......	......	......	......	......	......	......	......	......
St. Thomas:										
Males	......	......	......	......	......	......	......	......	......	3
Females	......	......	......	......	......	......	......	......	......	1
Total	......	......	......	......	......	......	......	......	......	4
Total Males	4	1	......	17	2	1	......	......	......	4
Females	3	......	......	30	1	......	2	......	2	3
Grand Total	7	1	......	47	3	1	2	......	2	7

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

Order 5.—Diseases of Urinary System.—*Nephritici.*									Order 6.—Diseases of the Generative Organs.—*Genetici.*							
Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Stricture of Urethra.	Hydrocele (Dropsy of Testicle).	Hydrops Ovarii (Ovarian Dropsy).	Metritis (Inflammation of Womb).	Morbus Uteri (Uterine Disease).	Polypus Uteri (Uterine Polypus).	Tumor Ovarii (Ovarian Tumor.)	Tumor Uteri (Uterine Tumor).
....	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	1	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	1	......	......	......	......	......	......	......	....
1	11	5	2	......	2	22	17	1	2	......	.....	......	......	......	....
....	1	1	......	1	......	17	17	......	......	......	4	6	......	4	9
1	12	6	2	1	2	39	34	1	2	......	4	6	......	4	9

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS III.—*Continued.*										
	ORDER 7.—DISEASES OF THE LOCOMOTIVE SYSTEM.—*Myostici.*							ORDER 8.—DISEASES OF THE INTEGUMENTARY SYSTEM.—*Chrotici.*			
	Arthritis (Inflammation of Joints).	Atropia Musculorum (Muscular Atrophy).	Caries.	Exostitis (Tumor of Bone).	Necrosis.	Ostitis (Inflammation of Bones).	Synovitis.	Abscessus (Abscess).	Pemphigus.	Phlegmon.	Total Local Diseases.
Belleville:											
Males	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	37
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
Total	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	54
St. Thomas:											
Males	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	16
Females	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
Total	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	34
Total Males	1	.....	2	.....	1	1	1	18	2	1	1031
" Females	.....	.....	1	.....	1	.....	1	11	1	.....	855
Grand Total	1	.....	3	.....	2	1	2	29	3	1	1886

CAUSES OF DEATHS, 1883—*Continued.*

CLASS IV.—DEVELOPMENTAL DISEASES.—*Metamorphici.*

Order 1.—Developmental Diseases of Children.—*Paidici.*									Order 2.—Developmental Diseases of Women.—*Gyniaci.*							
Anus Imperforatus (Imperforate Anus).	Atelectasis Pulmonum.	Cyanosis.	Dentitio (Teething).	Haemorrhagia Umbilicalis (Umbilical Hæmorrhage).	Natus Præter Naturam (Preternatural Birth).	Partus Emortuus (Still-birth).	Partus Intempestivus (Premature Birth).	Spina Bifida.	Abortus (Abortion, Miscarriage).	Climacteria (Turn of Life).	Eclampsia Parturi (Convulsions in Child-birth).	Febris Puerperalis (Puerperal Fever).	Hæmorrhagia Post Partum (Flooding).	Mania Puerperalis (Puerperal Mania).	Partus (Child-birth).	Phlegmasia Dolens (Milk Leg).
......	....	....	....	......	......	5	2	....	......	......	......	......	......	......	......	....
......	....	....	....	......	......	......	......	....	......	......	......	1	......	......	......	....
......	....	....	....	......	......	5	2	....	.....	......	......	1	......	......	......	....
......	....	....	1	......	......	2	......	....	......	......	......	......	......	.....	......	....
......	....	....	1	......	......	......	......	....	......	......	......	.....	......	......	3	....
......	....	....	2	......	......	2	.....	....	......	......	......	......	......	......	3	....
1	11	1	51	1	......	105	74	3	......	......	......	.....	......	......	......	....
......	9	3	48	4	......	90	60	1	......	......	5	34	5	......	22	1
1	20	4	99	5	......	195	134	4	......	......	5	34	5	......	22	1

TABLE G.—DEATHS BY CITIES.—

CITIES.	CLASS IV.—*Continued.* O. 3.—Dev. Dis. Old People.—*Geratici.*			CLASS V.—VIOLENCE TENDING Order 1.—Accident							
	Gangraena Senilis (Senile Gangrene).	Senectus (Old Age).	Total Developmental Diseases.	Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion of Spine).	Contusio (Contusion).	Explosio (Explosion).	Fractura (Fracture).	Gelatio (Freezing).	Ictus Fulminis (Lightning).
Belleville:											
Males	.....	5	12	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	7	8	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	12	20	.....	.....	.....	.....	.....	.....	.....	.....
St. Thomas:											
Males	.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....
Females	.....	5	9	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	6	13	.....	.....	.....	.....	.....	.....	.....	.....
Total Males	1	103	351	2	.....	4	.....	.....	3	5	.....
" Females	.....	124	406	6	.....	.....	.....	.....	.....	.....	.....
Grand Total	1	227	757	8	.....	4	.....	.....	3	5	.....

CAUSES OF DEATHS, 1883—*Continued.*

TO SUDDEN DEATH.—*Thanatici.*													
AND NEGLIGENCE.					ORDER 2. HOMICIDE	ORDER 3.—SUICIDE.—*Autophonici.*				ORDER 4. EXECUT'N.			
						Suicide.							
Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Total Violent Deaths.	Cause not Specified.	Total Number of Deaths.
.....	3	.....	3	1	....	.....	.....	.....	.....	....	7	.....	92
.....	.....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	1	72
.....	3	.....	3	1	....	.....	.....	.....	.....	....	7	1	164
.....	2	.....	1	4	....	.....	.....	.....	.....	....	7	.....	43
.....	.....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	.....	48
.....	2	.....	1	4	....	.....	.....	.....	.....	....	7	.....	91
2	38	1	48	21	....	.....	.....	2	4	....	130	73	2890
3	2	.....	8	.....	1	.....	.....	2	1	....	23	73	2577
5	40	1	56	21	1	.....	.....	4	5	....	153	146	5467

H. S. CREWE,

Inspector.

TABLE H.—DEATHS

COUNTIES.	Agents.		Artists.		Brickmakers.		Blacksmiths.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay								
Brant	2	110					2	86
Bruce							1	62
Carleton	4	192					1	85
Dufferin	1	39					1	26
Elgin							2	87
Essex	1	63			1	40		
Frontenac							3	121
Grey	2	76	1	48			2	76
Haldimand			1	23	1	76		
Halton	2	71			1	30		
Hastings								
Huron								
Kent							2	110
Lambton							1	41
Lanark							1	88
Leeds and Grenville							1	70
Lennox and Addington								
Lincoln	1	40	1	47				
Middlesex	4	190			3	134	5	325
Muskoka and Parry Sound							1	22
Norfolk	1	40	2	44	1	69	1	83
Northumberland and Durham	2	81					3	152
Ontario							5	304
Oxford							2	171
Peel							1	72
Perth	2	121						
Peterborough			1	33			3	137
Prescott and Russell							1	25
Prince Edward	1	49					1	44
Renfrew	1	51					1	41
Simcoe							4	138
Stormont, Dundas and Glengarry					1	47		
Victoria	1	52					1	21
Waterloo	4	126					3	213
Welland							2	152
Wellington	2	87					3	156
Wentworth	3	157	1	32			3	168
York	14	764			5	232	10	609
Totals	48	2309	7	227	13	628	67	3685
Average Age		48.1		32.4		48.3		55.0

BY OCCUPATIONS, 1883.

Brewers and Distillers.		Bricklayers.		Barbers.		Butchers.		Book-keepers and Clerks.		Bankers.		Bakers and Confectioners.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
.....	.....	.....	.....	.....	.....	.....	.....	2	83	.....	.....	.....	.....
.....	.....	2	105	.....	.....	2	94	3	106	1	76	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2	66	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	4	206	6	224	1	72	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1	26	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	26	.....	.....
.....	.....	.....	.....	1	27	1	33	3	92	.....	.....	.....	.....
1	60	.....	.....	2	96	1	83	1	25	.....	.....	1	64
.....	.....	.....	.....	.....	.....	.....	.....	2	83	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1	37	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	65	.....	.....	.....	.....	2	69	.....	.....	3	103
.....	.....	.....	.....	.....	.....	.....	.....	1	27	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	74	2	62	1	43	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2	71	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	24	1	24	1	22	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	47	4	100	.....	.....	.....	.....
1	24	.....	.....	1	52	.....	.....	12	431	1	34	1	81
.....	.....	.....	.....	.....	.....	.....	.....	1	21	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	3	151	2	69	1	79	.....	.....
.....	.....	.....	.....	.....	.....	2	128	3	99	.....	.....	.....	.....
1	23	.....	.....	.....	.....	.....	.....	2	52	.....	.....	.....	.....
1	46	2	120	.....	.....	1	67	4	134	1	28	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1	25	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	1	22	1	45	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2	54	1	52	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	40	1	63
.....	.....	.....	.....	.....	.....	.....	.....	2	77	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1	37	.....	.....	.....	.....
.....	.....	1	81	.....	.....	.....	.....	1	46	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	42	.....	.....
1	59	.....	.....	.....	.....	2	104	2	65	.....	.....	.....	.....
1	56	.....	.....	2	103	1	42	14	499	1	62	.....	.....
.....	.....	1	45	4	140	6	309	24	927	1	36	5	234
6	268	7	416	11	455	27	1384	104	3639	13	612	11	545
.....	44.6	.....	59.4	.....	41.3	.....	51.2	.....	35.0	.....	47.0	.....	49.5

TABLE H.—DEATHS BY

COUNTIES.	Carpenters.		Cabinet-makers.		Coopers.		Cooks.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay	3	130					1	36
Brant	5	292	1	42				
Bruce	6	277	1	67				
Carleton	7	374	3	193				
Dufferin	1	23						
Elgin	3	177			1	87		
Essex	6	319						
Frontenac	5	269	3	186				
Grey	2	145			1	52		
Haldimand			1	67	1	23		
Halton	1	25						
Hastings	4	305						
Huron	5	249	1	26	1	48		
Kent	5	231	1	90				
Lambton	1	48						
Lanark	7	386	1	76				
Leeds and Grenville	4	225						
Lennox and Addington	6	324						
Lincoln	5	181	1	22	1	54		
Middlesex	8	481		81				
Muskoka and Parry Sound	1	69						
Norfolk	2	80	1	46	1	64		
Northumberland and Durham	4	160	2	111	2	148		
Ontario	5	253						
Oxford	6	389						
Peel	1	50			2	132		
Perth	3	188			1	71		
Peterborough	6	289	2	71				
Prescott and Russell								
Prince Edward	3	247			1	46		
Renfrew	1	85			2	80		
Simcoe	4	179						
Stormont, Dundas and Glengarry	4	269	1	43				
Victoria	3	209						
Waterloo	4	180			1	25		
Welland	2	90						
Wellington	5	207	2	108	1	84		
Wentworth	16	831	3	195	1	75		
York	21	1179	5	259	2	84	1	54
Totals	175	9415	30	1683	19	1073	2	90
Average Age		53.8		56.1		56.5		45.0

OCCUPATIONS, 1883—*Continued.*

Chemists and Druggists.		Clergymen.		Contractors and Builders.		Carriage and Wagon Makers.		Dentists.		Engineers.		Editors.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
		1	32	1	50					1	58		
		1	77			2	122						
		1	58	2	57	1	76			3	69		
		2	117	1	41					2	125		
		1	64			1	39						
1	26									2	92		
		4	188			1	68			3	169		
1	74	2	143										
2	99												
		2	118							1	73		
1	80	2	87			2	156			2	71		
		1	83					1	24	1	44		
1	33												
										3	91		
1	37	1	60										
		1	60			2	118						
				2	153	1	56						
1	54	2	111	2	90	2	90						
		1	64										
		2	83										
		2	61	1	59	2	132	1	23				
		2	105	1	47					1	21		
1	26			1	31	1	59	1	23	1	67		
						1	57						
		1	70										
		1	69										
										1	65		
								1	50				
1	68	1	62										
		2	101							1	29		
						1	45						
		1	35	1	54	1	21						
		3	220	3	195	2	99			2	81		
		5	284	8	481	4	233			8	432	2	89
10	497	42	2352	23	1258	24	1371	4	120	32	1487	2	89
......	49.7	......	56.0	......	54.5	......	57.1	......	30.0	......	46.4	......	44.5

TABLE H.—DEATHS BY

COUNTIES.	Farmers.		Farmers' Wives.		Gardeners.		Gentlemen.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma	9	479	12	599	......	....	1	26
Brant	48	3180	36	2205	2	129	7	482
Bruce	87	5398	70	4201	1	84	......	....
Carleton	57	3581	25	1545	......	....	4	274
Dufferin	33	1694	28	1335	......	....	2	125
Elgin	48	3022	41	2574	2	95	2	113
Essex	69	4124	52	2964	1	79	1	31
Frontenac	53	3008	37	2239	2	148	1	78
Grey	74	4534	72	4688	......	....	4	219
Haldimand	35	2211	41	2345	......	....	4	267
Halton	26	1929	28	1711	......	....	5	313
Hastings	73	4457	68	4151	1	57	7	466
Huron	107	6362	91	5663	......	....	15	980
Kent	70	4363	40	2474	......	....	8	557
Lambton	64	3593	50	2661	......	....	5	361
Lanark	35	2167	24	1408	......	....	2	155
Leeds and Grenville	93	5776	62	3970	1	35	8	606
Lennox and Addington	40	2689	34	1984	......	....	1	73
Lincoln	38	2234	27	1593	......	....	4	271
Middlesex	138	8490	127	8060	1	64	4	230
Muskoka and Parry Sound	35	1819	18	986	......	....	1	78
Norfolk	40	2496	46	1978	1	73	6	409
Northumberland and Durham	101	6404	82	4945	......	....	11	756
Ontario	63	3563	52	3193	......	....	14	995
Oxford	85	5332	77	4477	......	....	8	522
Peel	37	2327	37	2163	1	80	3	209
Perth	76	4834	48	2844	......	....	6	417
Peterborough	44	2976	36	1913	......	....	6	392
Prescott and Russell	50	3146	43	2431	1	34	3	246
Prince Edward	41	2931	26	1604	......	....	3	221
Renfrew	43	2592	32	1852	......	....	1	74
Simcoe	75	4504	68	3842	1	52	4	302
Stormont, Dundas and Glengarry	104	7006	81	5225	......	....	2	171
Victoria	56	3523	45	2558	......	....	4	315
Waterloo	36	2412	61	3992	1	74	6	446
Welland	41	2651	34	2086	3	196	2	135
Wellington	89	5488	99	5783	......	....	7	486
Wentworth	66	4119	46	2881	4	240	5	303
York	96	6402	66	3975	7	444	18	1156
Totals	2375	147816	1962	117098	30	1884	195	13260
Average Age	.....	62.2	.....	59.7	......	62.8	.....	68.0

OCCUPATIONS, 1883—*Continued.*

Hunters and Fishermen.		Housewives.		Labourers.		Lumbermen.		Lawyers.		Milliners and Dressmakers.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
......	....	3	104	11	323	......	....	......	....	......	....
......	....	46	2605	16	741	......	....	......	....	4	201
......	....	20	1116	13	632	......	....	......	....	2	59
......	....	73	4152	86	4256	3	156	1	79	......	....
......	....	9	337	3	156	......	....	......	....	......	....
2	71	37	1967	11	516	......	....	......	....	......	....
4	189	54	2889	27	1295	......	....	......	....	......	....
......	....	69	3891	28	1696	1	47	......	....	1	28
1	21	38	1975	10	598	......	....	1	73	1	75
......	....	5	331	2	127	......	....	......	....	......	....
......	....	22	1191	17	981	......	....	......	....	2	53
......	....	51	2821	27	1592	......	....	......	....	......	....
......	....	38	2102	21	1094	......	....	......	....	2	116
......	....	14	910	16	920	......	....	......	....	......	....
......	....	39	1859	17	905	......	....	......	....	......	....
......	....	29	1568	7	332	......	....	......	....	1	81
......	....	49	2695	22	1199	......	....	1	22	......	....
......	....	19	998	12	598	......	....	1	50	......	....
......	....	58	3270	22	1136	......	....	......	....	2	84
1	65	98	5271	32	1557	......	....	1	40	......	....
......	....	4	150	5	241	2	61	......	....	1	45
......	....	23	1351	7	373	......	....	1	39	......	....
1	48	53	2642	30	1858	......	....	......	....	......	....
......	....	44	2517	27	1452	......	....	......	....	......	....
......	....	40	2350	16	1110	......	....	1	75	2	121
......	....	30	1716	12	543	......	....	......	....	......	....
......	....	21	1247	19	927	......	....	1	53	1	30
......	....	38	1778	20	992	1	42	......	....	......	....
......	....	13	603	13	785	1	28	......	....	......	....
......	....	26	1362	10	659	......	....	......	....	......	....
......	....	12	665	9	240	1	60	......	....	......	....
......	....	38	1857	23	1037	2	112	......	....	1	46
......	....	19	973	24	1400	......	....	......	....	1	23
......	....	12	591	15	959	3	128	......	....	......	....
......	....	63	3272	17	1046	......	....	......	....	......	....
......	....	31	1720	15	734	......	....	......	....	......	....
......	....	47	2494	30	1759	1	53	1	37	2	60
......	....	154	8453	73	3782	......	....	1	26	......	....
1	105	250	13112	154	7338	......	....	6	288	5	196
10	499	1689	90905	919	47889	15	687	16	782	28	1218
......	50.0	....	53.8	......	52.1	......	45.8	......	49.0	....	43.5

TABLE H.—DEATHS

COUNTIES.	Masons.		Machinists.		Moulders.		Millers.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay	.....	.....	.....	.....	.....	.....	.....	.....
Brant	.....	.....	.....	.....	2	66	3	165
Bruce	.....	.....	.....	.....	.....	.....	.....	.....
Carleton	2	135	1	42	.....	.....	1	59
Dufferin	1	80	.....	.....	.....	.....	1	27
Elgin	.....	.....	2	79	1	49	1	76
Essex	1	71	.....	.....	1	46	2	76
Frontenac	3	178	2	61	.....	.....	.....	.....
Grey	.....	.....	.....	.....	.....	.....	.....	.....
Haldimand	.....	.....	.....	.....	.....	.....	.....	.....
Halton	2	111	.....	.....	.....	.....	.....	.....
Hastings	1	63	.....	.....	.....	.....	.....	.....
Huron	2	135	.....	.....	.....	.....	1	65
Kent	.....	.....	.....	.....	.....	.....	.....	.....
Lambton	1	63	.....	.....	.....	.....	2	133
Lanark	.....	.....	1	38	.....	.....	.....	.....
Leeds and Grenville	2	102	.....	.....	1	21	1	35
Lennox and Addington	1	81	.....	.....	.....	.....	1	35
Lincoln	.....	.....	.....	.....	.....	.....	1	43
Middlesex	1	43	3	142	1	31	1	43
Muskoka and Parry Sound	1	47	.....	.....	.....	.....	.....	.....
Norfolk	.....	.....	.....	.....	1	52	1	68
Northumberland and Durham	1	29	.....	.....	.....	.....	3	128
Ontario	4	274	1	30	2	44	1	33
Oxford	3	184	.....	.....	.....	.....	3	157
Peel	.....	.....	.....	.....	.....	.....	.....	.....
Perth	2	97	.....	.....	.....	.....	1	69
Peterborough	2	100	.....	.....	.....	.....	1	29
Prescott and Russell	.....	.....	.....	.....	.....	.....	.....	.....
Prince Edward	.....	.....	.....	.....	.....	.....	.....	.....
Renfrew	.....	.....	.....	.....	.....	.....	1	27
Simcoe	.....	.....	1	21	.....	.....	.....	.....
Stormont, Dundas and Glengarry	2	132	.....	.....	.....	.....	.....	.....
Victoria	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo	2	97	1	27	.....	.....	.....	.....
Welland	2	141	.....	.....	.....	.....	.....	.....
Wellington	4	227	1	22	1	31	3	148
Wentworth	2	146	7	268	5	191	3	213
York	3	156	5	203	7	272	2	93
Totals	45	2692	25	933	22	803	34	1722
Average Age	.....	60.0	.....	37.3	.....	36.5	.....	50.6

BY OCCUPATIONS, 1883—*Continued.*

Millwrights.		Miners.		Musicians.		Manufacturers.		Merchants.		Other Occupations.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
......	......	......	......	......	......	......	......	1	45	......	......
......	......	......	......	......	......	2	123	2	207	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	1	58	5	301	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	1	49	......	......	......	......
1	82	......	......	......	......	......	......	......	......	......	......
......	......	2	104	......	......	1	66	4	227	1	36
......	......	......	......	......	......	1	63	2	54	......	......
......	......	......	......	......	......	......	......	1	30	......	......
......	......	......	......	......	......	......	......	1	73	......	......
......	......	1	21	......	......	2	110	4	252	......	......
......	......	......	......	2	57	......	......	6	340	......	......
......	......	......	......	......	......	1	33	1	64	......	......
......	......	......	......	......	......	......	......	......	......	2	74
......	......	......	......	......	......	......	......	2	116	2	80
......	......	......	......	......	......	1	42	1	22	......	......
......	......	......	......	......	......	......	......	1	30	......	......
......	......	......	......	......	......	4	192	2	109	......	......
2	150	......	......	......	......	......	......	10	582	2	70
......	......	......	......	1	55	......	......	......	......	......	......
......	......	......	......	......	......	2	141	1	54	......	......
......	......	......	......	......	......	......	......	6	351	......	......
......	......	......	......	......	......	1	65	3	136	......	......
......	......	......	......	......	......	......	......	2	121	1	49
......	......	......	......	......	......	......	......	5	239	1	46
1	58	......	......	......	......	......	......	2	102	1	40
......	......	......	......	......	......	......	......	1	44	......	......
......	......	......	......	......	......	......	......	2	63	......	......
1	71	......	......	......	......	......	......	2	90	......	......
......	......	......	......	......	......	1	75	3	166	1	38
......	......	......	......	......	......	2	87	5	215	2	75
......	......	......	......	......	......	1	34	5	209	2	77
......	......	......	......	......	......	2	100	......	......	1	31
......	......	......	......	......	......	2	152	1	56	2	125
1	58	......	......	......	......	3	190	1	50	......	......
......	......	......	......	......	......	2	84	2	145	......	......
......	......	......	......	......	......	1	71	16	1039	......	......
1	45	......	......	......	......	1	27	27	1585	7	336
7	464	3	125	3	112	32	1762	127	7017	25	1077
......	66.3	......	41.6	......	37.3	......	55.0	......	55.2	......	43.0

TABLE H.—DEATHS BY

COUNTIES.	Other Mechanics.		Painters.		Pedlars.		Physicians.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay	.....	.....	.....	.....	.....	.....	.....	.....
Brant	2	78	1	45	.....	.....	2	94
Bruce	.....	.....	.....	.....	.....	.....	2	57
Carleton	.....	.....	.....	.....	.....	.....	1	27
Dufferin	.....	.....	.....	.....	.....	.....	.....	.....
Elgin	2	94	2	55	.....	.....	.....	.....
Essex	2	82	1	30	.....	.....	.....	.....
Frontenac	4	155	1	35	.....	.....	.....	.....
Grey	1	54	.....	.....	.....	.....	.....	.....
Haldimand	.....	.....	.....	.....	.....	.....	.....	.....
Halton	.....	.....	.....	.....	1	84	1	33
Hastings	4	259	.....	.....	1	50	1	27
Huron	1	59	.....	.....	.....	.....	1	70
Kent	1	60	1	73	.....	.....	3	164
Lambton	.....	.....	2	93	.....	.....	1	35
Lanark	.....	.....	.....	.....	.....	.....	2	100
Leeds and Grenville	3	159	.....	.....	.....	.....	1	73
Lennox and Addington	.....	.....	.....	.....	.....	.....	.....	.....
Lincoln	10	431	2	75	.....	.....	2	151
Middlesex	6	288	5	239	1	37	7	325
Muskoka and Parry Sound	1	44	.....	.....	.....	.....	.....	.....
Norfolk	.....	.....	.....	.....	.....	.....	2	111
Northumberland and Durham	2	109	3	139	1	72	3	101
Ontario	5	202	3	136	.....	.....	1	76
Oxford	3	149	.....	.....	.....	.....	.....	.....
Peel	.....	.....	1	35	.....	.....	1	60
Perth	2	67	.....	.....	.....	.....	2	115
Peterborough	1	48	.....	.....	.....	.....	.....	.....
Prescott and Russell	1	27	.....	.....	.....	.....	.....	.....
Prince Edward	.....	.....	.....	.....	.....	.....	2	109
Renfrew	.....	.....	1	59	1	52	1	85
Simcoe	.....	.....	1	82	.....	.....	2	120
Stormont, Dundas and Glengarry	2	101	1	25	.....	.....	.....	.....
Victoria	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo	3	111	1	22	.....	.....	.....	.....
Welland	.....	.....	.....	.....	.....	.....	.....	.....
Wellington	.....	.....	1	22	.....	.....	1	25
Wentworth	10	485	4	206	1	76	.....	.....
York	15	762	4	211	1	22	4	199
Totals	81	3824	35	1582	7	393	43	2157
Average Age	.....	47.2	.....	45.2	.....	56.1	.....	50.1

OCCUPATIONS, 1883—*Continued.*

Plasterers.		Printers.		Provincial Land Surveyors.		Public Officials.		Railway Employees.		Students.		Stonecutters.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
												1	28
						2	137	3	139				
						1	44						
4	137	5	133			6	304	1	21			3	96
1	68					3	191	5	193				
						3	183	3	143				
		1	26	1	25	2	186	1	21			1	81
		1	28			1	84	1	21				
1	49							1	23				
								1	62	1	28		
						3	146	2	70				
		1	24			3	164						
2	138	1	23			1	70						
		1	36			1	65	2	58	1	26		
								2	84	1	22		
		1	30			2	105	3	136				
								1	40				
						4	276					4	204
1	30	1	23			2	112	4	215				
						1	89			1	24		
		1	40	1	21	1	44	5	174			1	29
		2	60			2	118					1	44
1	55												
		2	50					3	107				
						1	60						
						2	56	1	22	1	21		
				1	78	2	149			1	25		
						2	135	1	36				
						1	74						
1	58					2	115						
						3	200	3	152			1	24
1	75					1	66						
1	28					6	354	5	153			4	187
		6	276			11	623	10	363	4	96	4	168
13	638	23	749	3	124	69	4150	58	2233	10	242	20	861
......	49.0	......	32.5	......	41.3	......	60.1	......	38.5	......	24.2	......	43.0

TABLE II.—DEATHS BY

COUNTIES.	Shoemakers.		Sailors.		Saddlers and Harness-makers.		Seamstresses.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay	.....	....	1	32	.....	....	.....	....
Brant	4	284	.....	....	.....	....	.....	....
Bruce	3	137	.....	....	.....	....	.....	....
Carleton	2	111	1	52	1	24	1	83
Dufferin	.....	....	.....	....	.....	....	1	47
Elgin	1	50	.....	....	2	78	2	111
Essex	3	118	1	21	1	28	1	34
Frontenac	4	231	3	168	.....	....	3	129
Grey	3	111	3	114	1	52	.....	....
Haldimand	.....	....	.....	....	.....	....	.....	....
Halton	2	118	.....	....	.....	....	1	69
Hastings	5	293	1	63	2	62	.....	....
Huron	1	80	2	63	1	70	.....	....
Kent	.....	....	4	140	1	32	.....	....
Lambton	2	132	.....	....	.....	....	.....	....
Lanark	4	237	.....	....	1	48	.....	....
Leeds and Grenville	2	105	.....	....	.....	....	.....	....
Lennox and Addington	3	104	.....	....	.....	....	2	68
Lincoln	1	81	2	108	.....	....	.....	....
Middlesex	6	359	.....	....	.....	....	.....	....
Muskoka and Parry Sound	.....	....	.....	....	.....	....	.....	....
Norfolk	.....	....	1	26	.....	....	.....	....
Northumberland and Durham	1	73	.....	....	.....	....	1	46
Ontario	1	56	1	62	.....	....	.....	....
Oxford	4	250	.....	....	.....	....	.....	....
Peel	2	128	.....	....	.....	....	.....	....
Perth	2	150	.....	....	.....	....	1	59
Peterborough	2	153	.....	....	.....	....	.....	....
Prescott and Russell	1	63	.....	....	1	28	.....	....
Prince Edward	2	113	2	77	1	30	2	55
Renfrew	.....	....	.....	....	.....	....	.....	....
Simcoe	5	290	.....	....	.....	....	.....	....
Stormont, Dundas and Glengarry	2	132	.....	....	1	53	2	94
Victoria	2	124	.....	....	.....	....	2	50
Waterloo	3	200	.....	....	1	28	.....	....
Welland	.....	....	2	94	.....	....	1	75
Wellington	4	245	.....	....	2	92	1	34
Wentworth	5	283	3	157	3	79	3	72
York	20	1086	1	52	1	68	8	3
Totals	102	5897	28	1229	20	772	32	1353
Average Age	.....	57.8	.....	43.9	.....	38.6	.....	42.2

OCCUPATIONS, 1883—*Continued.*

Servants (Female).		Tinsmiths.		Teamsters.		Tavern-Keepers.		Tobacconists and Cigarmakers.		Teachers.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
......	......	......	......	......	......	1	54	......	......	......	......
......	......	......	......	1	72	5	280	1	36	M. 2	84
......	......	......	......	......	......	2	105	......	......	......	......
6	299	......	......	......	......	1	55	......	......	M. 2	129
1	85	......	......	1	65	1	24	......	......	......	......
......	......	......	......	......	......	2	93	......	......	F. 2	55
1	45	......	......	1	27	1	30	......	......	M. 1	63
3	136	......	......	6	346	1	48	......	......	M. 1	84
1	22	......	......	......	......	1	42	......	......	M. 1 F. 1	88 32
1	23	......	......	......	......	......	......	......	......	M. 2 F. 1	56 27
......	......	......	......	......	......	1	25	......	......	......	......
1	33	......	......	1	59	1	26	......	......	M. 1 F. 1	70 25
......	......	2	73	1	47	1	41	......	......	M. 1 F. 2	24 52
1	25	......	......	......	......	1	36	1	26	......	......
1	23	......	......	......	......	1	54	......	......	......	......
......	......	1	48	......	......	4	166	......	......	......	......
2	70	......	......	......	......	......	......	......	......	F. 1	25
......	......	......	......	......	......	2	109	......	......	M. 1 F. 1	87 23
1	55	......	......	1	37	2	123	......	......	......	......
4	212	......	......	......	......	1	58	......	......	M. 1 F. 1	35 22
......	......	......	......	......	......	1	62	......	......	M. 1	85
......	......	......	......	......	......	1	72	......	......	......	......
1	32	......	......	......	......	3	168	......	......	M. 4 F. 2	116 101
3	102	1	50	1	45	2	84	......	......	M. 3 F. 1	135 25
1	22	......	......	......	......	4	174	1	48	......	......
......	......	......	......	......	......	......	......	......	......	M. 1	58
......	......	1	47	......	......	1	40	......	......	M. 1	84
2	86	......	......	1	39	3	121	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	1	80	......	......	......	......
......	......	1	32	......	......	1	26	......	......	M. 3	233
1	21	1	22	2	147	2	106	......	......	F. 2	65
1	22	......	......	......	......	2	76	......	......	M. 3 F. 1	221 21
......	......	......	......	2	146	2	106	......	......	F. 1	26
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	3	116	......	......	M. 2 F. 1	121 23
1	33	2	59	2	93	2	102	......	......	M. 2	50
11	354	3	123	4	150	9	410	2	61	M. 3	157
26	858	1	62	9	433	11	577	1	60	M. 5 F. 3	292 96
70	2558	13	516	33	1706	77	3689	6	231	M. 41 F. 21	M 2272 F. 618
										62	2890
......	36.5	......	40.0	......	51.7	......	47.9	......	38.5		M. 55.4 F. 29.4

TABLE H.—DEATHS BY

COUNTIES.	Telegraph Operators.		Tailors.		Tanners and Curriers.		Undertakers.	
	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.	No.	Total Ages.
Algoma and Thunder Bay	.....	....	.....	....	.....	....	.....	....
Brant	.....	....	.....	....	.....	....	.....	....
Bruce	.....	....	2	48	.....	....	.....	....
Carleton	.....	....	.....	....	.....	....	.....	....
Dufferin	.....	....	1	58	.....	....	.....	....
Elgin	1	22	1	70	.....	....	.....	....
Essex	.....	....	2	104	.....	....	.....	....
Frontenac	.....	....	1	59	.....	....	.....	....
Grey	.....	....	2	146	.....	....	.....	....
Haldimand	1	21	.....	....	.....	....	.....	....
Halton	.....	....	1	63	.....	....	1	59
Hastings	.....	....	1	93	1	30	.....	....
Huron	.....	....	1	61	1	43	.....	....
Kent	.....	....	.....	....	.....	....	.....	....
Lambton	.....	....	.....	....	1	49	.....	....
Lanark	.....	....	1	60	.....	....	.....	....
Leeds and Grenville	.....	....	1	51	.....	....	.....	....
Lennox and Addington	.....	....	1	35	.....	....	.....	....
Lincoln	.....	....	3	177	.....	....	.....	....
Middlesex	.....	....	11	608	.....	....	.....	....
Muskoka and Parry Sound	.....	....	.....	....	.....	....	.....	....
Norfolk	.....	....	.....	....	.....	....	.....	....
Northumberland and Durham	1	32	.....	....	2	60	.....	....
Ontario	.....	....	3	195	.....	....	.....	....
Oxford	.....	....	.....	....	.....	....	.....	....
Peel	.....	....	.....	....	.....	....	.....	....
Perth	.....	....	1	76	.....	....	.....	....
Peterborough	.....	....	.....	....	.....	....	.....	....
Prescott and Russell	.....	....	.....	....	.....	....	.....	....
Prince Edward	.....	....	.....	....	.....	....	.....	....
Renfrew	1	21	.....	....	.....	....	.....	....
Simcoe	.....	....	3	219	.....	....	.....	....
Stormont, Dundas and Glengarry	.....	....	1	47	.....	....	.....	....
Victoria	.....	....	1	51	.....	....	.....	....
Waterloo	.....	....	4	206	1	65	.....	....
Welland	.....	....	1	77	.....	....	.....	....
Wellington	1	31	3	227	.....	....	.....	....
Wentworth	.....	....	2	110	2	116	.....	....
York	1	40	6	365	1	70	1	27
Totals	6	167	54	3206	9	433	2	86
Average Age	.....	27.8	.....	59.3	.....	48.1	.....	43.0

OCCUPATIONS, 1883—*Concluded.*

Volunteers, Soldiers and Pensioners.		Watchmakers and Jewellers.		Weavers.		Total Number of Deaths.	Total Ages.	
No.	Total Ages.	No.	Total Ages.	No.	Total Ages.		Aggregate.	Average.
....	....	....	....	....	....	49	2079	42.4
1	57	....	....	....	....	213	12420	58.3
1	80	....	....	2	129	223	12822	57.5
2	146	....	....	1	77	327	17961	54.9
2	148	....	....	....	....	88	4295	48.8
....	....	....	....	....	....	181	10171	56.2
6	448	....	....	1	86	257	13980	54.4
8	528	....	....	1	52	272	15446	56.8
2	128	....	....	....	....	236	13919	59.3
2	148	....	....	....	....	103	5946	57.7
....	....	....	....	1	65	122	7322	60.0
....	....	....	....	2	117	280	16349	58.3
....	....	....	....	1	80	316	18366	58.1
....	....	....	....	....	....	176	10572	60.0
1	78	....	....	1	69	204	10726	52.5
....	....	....	....	1	21	133	7449	56.0
1	75	....	....	2	120	272	16017	58.9
....	....	....	....	....	....	127	7328	57.7
2	126	....	....	....	....	209	11476	55.0
7	493	1	39	1	78	526	30189	57.3
....	....	....	....	....	....	75	3849	71.3
....	....	....	....	....	....	152	8164	53.7
1	85	2	75	1	28	349	19860	57.0
....	....	....	....	1	60	260	14557	56.0
....	....	....	....	2	153	275	16455	60.0
1	77	....	....	....	....	139	8072	58.0
....	....	....	....	2	107	206	12137	58.9
1	60	1	64	....	....	177	9602	54.3
2	186	....	....	....	....	133	7730	58.1
....	....	....	....	....	....	126	7838	62.2
....	....	1	23	....	....	122	6686	56.4
3	205	....	....	3	228	263	14457	55.0
1	44	....	....	....	....	272	16823	61.8
....	....	....	....	3	198	158	9299	58.7
....	....	2	44	3	195	223	13482	60.4
1	74	....	....	....	....	155	9178	59.2
1	23	1	37	1	65	340	19076	56.1
5	259	1	29	2	50	535	28532	53.3
5	352	1	72	....	....	939	49585	52.8
56	3820	10	383	32	1978	9213	520215	56.4
....	68.2	....	38.3	....	61.8	....	....	....

H. S. CREWE,

Inspector.

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS I.—ZYMOTIC						
	ORDER 1.—MIASMATIC						
	Cholera Morbus.	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Febris Biliosa (Bilious Fever).
Agents			1			1	
Artists						1	
Brickmakers							
Blacksmiths			1				
Brewers							
Bricklayers							
Barbers							
Butchers			1				
Book-keepers				1	1		
Bankers				1			
Bakers and Confectioners							
Carpenters		1	1	1			
Cabinet-makers							
Coopers							
Cooks							
Chemists and Druggists							
Clergymen		2					
Contractors and Builders				1			
Carriage and Waggon-makers						1	
Dentists							
Engineers							
Editors							
Farmers	12	10		3	5	20	
Gentlemen		2	1			2	
Gardeners							
Hunters and Fishermen							
Labourers		3				11	1
Lumbermen							1
Lawyers							
Milliners and Dressmakers					1		
Masons						1	
Machinists				1		1	
Moulders							
Millers			1	1			
Millwrights							
Musicians							
Manufacturers						1	
Merchants					1	2	
Mechanics (kind not specified)							
Miners							
Other Occupations						1	
Printers							
Painters							
Pedlars							
Plasterers							
Physicians				1			
Public Officials						1	
Provincial Land Surveyors							
Railroad Employees	1						

CAUSES OF DEATHS, 1883.

DISEASES.—*Zymotici.*

Diseases.—*Miasmatici.*											Order 2.—Enthetic Diseases.	Order 3.—Dietic Diseases.	
Febris Cerebro-spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Pyaemia.	Scarlatina (Scarlet Fever).	Variola (Small Pox).	Syphilis.	Alcoholism.	Scorbutis (Scurvy).
				3				1				2	
				1									
				2								1	
				1									
												1	
												1	
				2								4	
				2									
				6								1	
				1									
				1									
				3									
				1								1	
				2									
1			3	32	2	3	4	13				8	
				1		1						1	
1	1			17	1			3		3		4	
				1								1	
				1				1					
				2									
				2									
				3								1	
	1			2									
								1					
				6				2				1	
				2								1	
			1										
				2								1	
				1				1					
				4								1	
		2		4				2				1	
				1									
1								1					

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.* Order 1.—Diathetic Diseases.—*Diathctici.*						Order 2.—Tubercular Diseases.—*Phthisici.*			
	Anæmia.	Anasarca (General Dropsy).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Podagra (Gout).	Rheumatismus (Rheumatism.)	Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis.)	Peritonitis Tuberculosis (Tubercular Peritonitis).	Phthisis Pulmonalis (Consumption.)
Agents	1	.....	2	2	1	.....	.....	.....	.....	7
Artists	.....	1	.....	.....	.....	.....	.....	.....	.....	2
Brickmakers	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Blacksmiths	1	3	2	2	.....	.....	.....	.....	.....	10
Brewers	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Bricklayers	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Barbers	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Butchers	.....	.....	.....	2	.....	.....	.....	.....	.....	2
Book-keepers	.....	1	.....	3	.....	1	.....	.....	.....	49
Bankers	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Bakers and Confectioners	.....	.....	.....	.....	.....	1	1	.....	.....	2
Carpenters	1	2	2	8	.....	2	.....	1	1	45
Cabinet-makers	.....	.....	.....	2	.....	.....	.....	.....	.....	9
Coopers	1	2	.....	.....	.....	.....	.....	.....	.....	4
Cooks	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chemists and Druggists	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
Clergymen	.....	.....	.....	3	.....	.....	.....	.....	.....	12
Contractors and Builders	.....	.....	.....	1	.....	.....	.....	.....	.....	4
Carriage and Waggon-makers	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Dentists	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	.....	.....	.....	1	.....	.....	.....	.....	.....	8
Editors	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Farmers	44	85	22	79	.....	24	1	.....	.....	381
Gentlemen	.....	3	1	8	1	4	.....	.....	.....	15
Gardeners	1	1	.....	1	.....	1	.....	.....	.....	2
Hunters and Fishermen	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Labourers	9	25	6	20	.....	6	.....	3	.....	169
Lumbermen	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Lawyers	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Milliners and Dressmakers	.....	.....	.....	1	.....	1	.....	.....	.....	7
Masons	.....	1	1	2	.....	.....	.....	.....	.....	6
Machinists	.....	.....	.....	.....	.....	1	.....	.....	.....	5
Moulders	.....	.....	.....	.....	.....	1	.....	.....	.....	7
Millers	.....	1	.....	1	.....	1	.....	.....	.....	8
Millwrights	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Musicians	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Manufacturers	.....	1	.....	2	.....	.....	.....	.....	.....	8
Merchants	1	1	1	6	.....	3	.....	1	.....	19
Mechanics (kind not specified.)	5	1	1	3	.....	6	.....	.....	.....	18
Miners	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other Occupations	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Printers	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
Painters	.....	.....	.....	2	.....	.....	.....	.....	.....	12
Pedlars	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Plasterers	.....	1	.....	.....	.....	1	.....	.....	.....	3
Physicians	.....	2	.....	.....	.....	.....	.....	.....	.....	8
Public Officials	3	1	.....	1	.....	1	1	.....	.....	8
Provincial Land Surveyors	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Railroad Employees	.....	.....	.....	1	.....	.....	.....	.....	.....	12

CAUSES OF DEATHS, 1883—*Continued.*

CLASS III.—LOCAL DISEASES.—*Monorganici.*

Order 1.—Diseases of the Nervous System.—*Cephalici.*													Order 2.—Diseases of the Circulatory System.—*Cardiaci.*				
Apoplexia (Apoplexy).	Atropia.	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis.	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Angina Pectoris (Breast Pang).	Atropia Cordis (Atrophy of Heart).	Degeneratio Cordis (Fatty Degeneration of Heart).	Hydrops Pericardii.	Morbus Valvularum Cordis (Heart Disease).
	1						1	1		1							5
1			1														2
3	1						1			4							3
1			1														
1																	1
1									1								2
3		1								2							2
3			2				2		1	2							8
			1						1								
3					1		4	1	1	2					1		11
2							1										3
1									1								3
																	1
1									1								1
1				1	1				1								4
1									1	1							1
2		1								2							4
							1										1
3		1															3
							1										
88	1	3	5	1	8		30	17	9	99	1	1			2	3	134
8		1	2					1		15			1				9
							1			3							3
		2															
34			7	2		1	12	4	2	41	1	1				1	84
																	1
1							1			2							3
							1										4
2							1			5							7
			1														3
1										1							
																	3
										1							
																	1
3							1	1		2					1		1
9		1							1	7							13
1							1			3							2
										1							1
												1					
							1			1	1						2
3							1										2
1										1							
										1							1
2				1						2							3
5										3							6
			1														
1			1				1				1						2

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS III.—								
	ORDER 3.– DISEASES OF THE RESPIRATORY SYSTEM.—*Pneumonici.*						ORDER 4.—		
	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).	Pneumonia (Inflammation of Lungs).	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis of Liver.
Agents	4					4			
Artists						1			
Brickmakers						2			
Blacksmiths	2				1	5			1
Brewers						1			
Bricklayers									
Barbers		1				2			
Butchers		1				3			
Book-keepers	1					6			1
Bankers	1					2			
Bakers and Confectioners									
Carpenters	2	2	1		1	12			
Cabinet-makers	1				1	4			
Coopers		2							
Cooks	1								
Chemists and Druggists									
Clergymen									
Contractors and Builders					1	2			1
Carriage and Waggon-makers		1				4			
Dentists									
Engineers		2	1			3			
Editors									
Farmers	37	30	1	2	6	131	2	1	1
Gentlemen	4	11				12			
Gardeners	1	1				5			
Hunters and Fishermen									
Labourers	21	16			5	78			1
Lumbermen						1			
Lawyers									
Milliners and Dressmakers	1	3				2			
Masons	2	1				5			
Machinists	2					3			
Moulders						5			
Millers		1			1	3			
Millwrights									
Musicians									
Manufacturers	1	2				2			
Merchants	2			1		6			
Mechanics (kind not specified)	2	2				9			
Miners									
Other Occupations							1		
Printers									
Painters	1			1		3			
Pedlars									
Plasterers	1					1			
Physicians	1				1	2			
Public Officials					1	4			
Provincial Land Surveyors									
Railroad Employees		1				5			

CAUSES OF DEATH, 1883—*Continued.*

Continued.

DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*

Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Gastritis (Inflammation of Stomach).	Hæmorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Ileus.	Intus-susceptio (Invagination of Gut).	Obstipatio (Constipation).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Strictura Intestini (Stricture of Intestine).	Ulceration Intestini (Ulceration of Intestines).	Ulcus Stomachi (Ulcer of Stomach).
...	...	...	...	2	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	...	...	2	...	1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	1	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
...	4	1	...	4	1	...	...	...	...	...	2	...	1	1
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	2	...	...	...	1	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
16	52	30	1	21	9	7	1	1	1	...	11	...	...	2
...	...	1	...	4	2	1	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	14	5	...	5	1	1	...	...	...	1	3	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	3	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	1	...	2	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	4	...	...	6	2	...	1	...	...	...	...	...	...	...
...	1	2	...	4	1	...	...	...	...	...	1	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	2	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	2	1	...	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	1	...	...	...	...	...	...	...	...	...	...

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS III.—*Continued.* Order 5.—Diseases of the Urinary System.—*Nephritici.* Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	O. 8. Abscessus (Abscess).	CLASS IV. Dev. Dis. *Metamorphici.* O3. Dev. Dis. Old People. —*Geratici.* Senectus (Old Age).	CLASS V.— Order 1.— Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion).	Contusion.
Agents	....	....	....	....	....	....	....	....	....	3	....	....	....	....
Artists	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Brickmakers	....	....	....	....	....	....	1	1	....	1	....	....	....	....
Blacksmiths	....	....	1	....	....	....	2	....	1	8	....	....	....	....
Brewers	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bricklayers	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Barbers	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Butchers	....	....	1	....	....	....	....	1	1	2	....	....	....	....
Book-keepers	....	....	....	....	....	....	1	2	....	2	....	....	....	....
Bankers	....	....	....	....	....	....	1	....	....	1	....	....	....	....
Bakers and Confectioners	....	....	....	....	....	....	....	....	....	2	....	....	....	....
Carpenters	....	2	....	1	1	....	1	7	....	17	....	....	....	....
Cabinet-makers	....	....	....	....	....	....	....	....	....	3	....	....	....	....
Coopers	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Cooks	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chemists and Druggists	....	1	....	....	....	....	....	....	....	1	....	....	....	....
Clergymen	....	1	....	....	....	....	1	....	....	6	....	....	....	....
Contractors and Builders	1	1	....	....	....	....	....	....	....	3	....	....	....	....
Carriage and Waggon-makers	....	....	....	....	....	....	....	....	....	3	1	....	....	....
Dentists	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Engineers	....	....	....	....	....	....	....	....	....	1	1	....	....	....
Editors	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Farmers	3	23	15	4	12	2	16	28	15	570	2	1	1	2
Gentlemen	....	2	1	....	1	1	8	2	4	58	....	....	....	....
Gardeners	....	1	....	....	....	....	....	....	....	5	....	....	....	....
Hunters and Fishermen	....	....	....	....	1	....	1	....	....	....	....	....	....	....
Labourers	....	6	6	....	2	....	6	11	2	138	3	....	....	....
Lumbermen	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Lawyers	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Milliners and Dressmakers	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Masons	....	....	....	....	....	....	1	....	....	5	....	....	....	....
Machinists	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Moulders	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Millers	....	....	2	....	....	....	....	....	....	1	....	....	....	....
Millwrights	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Musicians	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Manufacturers	....	....	1	....	....	....	1	....	....	....	....	....	....	....
Merchants	....	1	2	....	....	....	2	2	1	13	....	....	....	....
Mechanics (kind not specified)	....	....	2	....	....	....	1	1	....	3	....	....	....	....
Miners	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Other Occupations	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Printers	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Painters	....	....	....	....	....	....	2	....	....	2	....	....	....	....
Pedlars	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Plasterers	1	....	....	....	....	....	....	....	....	1	....	....	....	....
Physicians	....	....	1	....	....	....	1	1	....	2	....	....	....	....
Public Officials	....	1	....	....	....	....	4	1	1	4	....	....	....	....
Provincial Land Surveyors	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Railroad Employees	....	....	....	....	....	....	....	1	1	....	....	....	....	....

CAUSES OF DEATHS, 1883—*Continued.*

VIOLENCE TENDING TO SUDDEN DEATH.—*Thanatici.* Accident and Negligence.										Ord. 3—Homicide.	Order 4.—Suicide.				Ord. 5—Execution.		
Explosion.	Fracture.	Gelatio (Freezing).	Ictus Fulminis (Lightning).	Morsus Serpentis (Snake-bite).	Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Other Causes of Death.	Total.
....	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	1	48
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	13
....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	3	67
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	27
....	....	....	....	....	....	1	....	4	2	....	1	....	....	....	....	....	104
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	13
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11
....	....	1	....	....	....	....	....	5	....	....	1	1	....	....	....	10	175
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	30
....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	1	19
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	10
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	42
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	23
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	24
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
2	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	32
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
....	4	1	4	....	3	17	3	76	7	1	2	2	....	3	....	41	2375
....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	3	195
....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	30
....	....	1	....	....	....	2	....	....	....	....	....	....	....	....	....	1	10
2	....	5	1	....	4	24	....	37	13	....	1	....	....	4	2	24	919
....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	4	15
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	16
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	28
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	45
....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	25
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	22
....	....	....	....	....	....	1	....	2	....	....	....	....	....	....	....	1	34
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	....	....	....	....	....	1	1	1	....	....	....	....	....	....	....	....	32
....	....	....	....	....	....	....	1	1	1	....	....	....	....	2	....	4	127
....	....	....	....	....	....	1	....	5	1	....	....	....	....	....	....	1	81
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	....	....	....	....	....	2	....	3	....	....	....	....	....	....	....	12	25
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	2	23
....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	35
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	13
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	8	43
....	....	....	....	....	....	3	....	2	1	....	....	....	....	....	....	4	69
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	....	....	....	....	....	1	1	2	20	....	....	....	....	1	....	....	58

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS I.—ZYMOTIC						
	ORDER 1.—MIASMATIC						
	Cholera Morbus.	Diarrhœa Acuta (Acute Diarrhœa).	Diarrhœa Chronica (Chronic Diarrhœa).	Dysenteria Acuta (Acute Dysentery).	Diphtheria.	Erysipelas.	Febris Biliosa (Bilious Fever).
Students							
Stonecutters							
Shoemakers	1	1					
Sailors							1
Saddlers and Harness-makers							
Seamstresses		1					
Servants							
Soldiers and Pensioners		2					
Tinsmiths							
Teamsters							
Tavern-keepers				1			
Teachers (Male)							
Teachers (Female)							
Telegraph Operators							
Tailors		2					
Tanners and Curriers		1					
Tobacconists and Cigar-makers							
Undertakers							
Weavers							
Watchmakers and Jewelers							
	14	25	6	11	8	43	3

CAUSES OF DEATHS, 1883—*Continued.*

DISEASES.—*Zymotici.*

Diseases.—*Miasmatici.*											Order 2. Enthetic Diseases.	Order 3.—Dietic Diseases.	
Febris Cerebro-spinalis (Cerebro Spinal Fever).	Febris Congestiva (Congestive Fever).	Febris Intermittens (Intermittent Fever).	Febris Remittens (Remittent Fever).	Febris Typhoides (Typhoid Fever).	Febris Typhus (Typhus Fever).	Influenza.	Morbilli (Measles).	Pyæmia.	Scarlatina (Scarlet Fever).	Variola (Small Pox).	Syphilis.	Alcoholism.	Scorbutis (Scurvy).
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	4	...	...	...	...	...	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	1	...	1	...	...	...	...
...	...	...	...	5	...	...	...	1	2	...	1	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	...	...	...	2	...	...	...	...	...	...	...	1	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	2	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	4	...	...	...	...	...	...	...	2	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	2	2	4	132	3	4	5	26	3	3	2	36	...

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS II.—CONSTITUTIONAL DISEASES.—*Cachectici.* Order 1.—Diathetic Diseases.—*Diathetici.* Anæmia.	Anasarca (General Dropsy).	Asthma (Spasmodic Asthma).	Carcinoma (Cancer).	Podagra (Gout).	Rheumatismus (Rheumatism).	Order 2.—Tubercular Disease.—*Phthisici.* Hydrocephalus.	Meningitis Tuberculosis (Tubercular Meningitis).	Peritonitis Tuberculosis (Tubercular Peritonitis).	Phthisis Pulmonalis (Consumption).
Students										2
Stonecutters			1							13
Shoemakers		2	1	3						21
Sailors		1								4
Saddlers and Harness-makers				1						11
Seamstresses	1	1		3						13
Servants		2								20
Soldiers and Pensioners		1	2	3						7
Tinsmiths		1								2
Teamsters	1	1		1						6
Tavern-keepers		4		2		2				13
Teachers (Male)	1			3						12
Teachers (Female)								1		12
Telegraph Operators										3
Tailors	1	3	1	2		2				7
Tanners and Curriers										2
Tobacconists and Cigar-makers	1		1							3
Undertakers										
Weavers		2	1	3						6
Watchmakers and Jewelers										2
Total	72	150	45	176	2	60	3	6	1	1044

CAUSES OF DEATHS, 1883—*Continued.*

CLASS III.—LOCAL DISEASES.—*Monorganici.*

Order 1.—Diseases of the Nervous System.—*Cephalici.*													Order 2.—Diseases of the Circulatory System.—*Cardiaci.*				
Apoplexia (Apoplexy).	Atropia.	Encephalitis (Inflammation of Brain).	Epilepsia (Epilepsy).	Hemiplegia (Paralysis of one side of the body).	Insania (Insanity).	Insolatio (Sunstroke).	Meningitis.	Myelitis.	Necrencephalus (Softening of Brain).	Paralysis (Palsy).	Paraplegia (Palsy of Lower Extremities).	Tetanus (Lockjaw).	Angina Pectoris (Breast Pang).	Atropia Cordis (Atrophy of Heart).	Hydrops Pericardii.	Degeneratio Cordis (Fatty Degeneration of Heart).	Morbus Valvularum Cordis (Heart Disease).
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
6	....	....	2	....	1	....	1	....	....	5	....	....	....	....	....	1	13
2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2
....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....
....	....	....	....	....	1	....	2	1	....	1	....	....	....	....	....	....	6
4	....	....	2	....	....	....	....	....	....	1	....	....	....	1	....	....	3
1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
2	....	1	....	1	....	1	....	....	....	....	....	....	....	....	....	....	1
8	....	....	2	....	....	....	4	1	3	4	....	....	....	....	....	....	5
1	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	1
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
....	1	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	1
216	4	12	28	6	14	2	73	29	23	219	4	3	1	1	4	5	382

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS III.—								
	ORDER 3.—DISEASES OF THE RESPIRATORY SYSTEM.—*Pneumonici.*						ORDER 4.—		
	Apoplexia Pulmonalis (Congestion of Lungs).	Bronchitis.	Hydrothorax (Dropsy of Chest).	Laryngitis (Inflammation of Larynx).	Pleuritis (Pleurisy).	Pneumonia (Inflammation of Lungs).	Ascites (Abdominal Dropsy).	Chololithus (Gallstones).	Cirrhosis of Liver.
Students	......	......	......	......	......	4	......	......	......
Stonecutters	......	......	......	......	......	1	......	......	......
Shoemakers	2	1	......	......	......	5	......	......	......
Sailors	1	......	......	......	1	1	......	......	......
Saddlers and Harness-makers	1	......	......	......	......	......	......	......	......
Seamstresses	1	......	......	......	......	2	......	......	......
Servants	2	......	......	......	2	6	2	......	......
Soldiers and Pensioners	2	......	......	......	......	4	......	......	......
Tinsmiths	......	1	......	......	......	1	......	......	......
Teamsters	3	1	......	......	......	1	......	......	......
Tavern-keepers	2	1	......	......	......	8	......	......	1
Teachers (Male)	......	......	......	1	1	1	......	......	......
Teachers (Female)	......	1	......	......	......	......	......	......	......
Telegraph Operators	......	......	......	......	......	1	......	......	......
Tailors	......	1	......	......	......	4	......	......	......
Tanners and Curriers	......	......	......	......	......	1	......	......	......
Tobacconists and Cigar-makers	......	......	......	......	......	......	......	......	......
Undertakers	......	......	......	......	......	......	......	......	......
Weavers	......	......	......	......	......	......	......	......	......
Watchmakers and Jewelers	1	1	......	......	......	1	......	......	......
Total	103	84	3	5	22	369	5	1	6

CAUSES OF DEATHS, 1883—*Continued.*

Continued.

DISEASES OF THE DIGESTIVE SYSTEM.—*Enterici.*

Dyspepsia (Indigestion).	Enteritis (Inflammation of Bowels).	Gastritis (Inflammation of Stomach).	Haemorrhois (Piles).	Hepatitis (Inflammation of Liver).	Hernia (Rupture).	Icterus (Jaundice).	Ileus.	Intus-susceptio (Invagination of Gut).	Obstipatio (Constipation).	Perforatio Intestini (Perforation of Intestine).	Peritonitis (Inflammation of Abdomen).	Strictura Intestini (Stricture of Intestine).	Ulceration Intestini (Ulceration of Intestines).	Ulcus Stomachi (Ulcer of Stomach).
											1			
				1										
2	2			4										1
				1										
		1												
	4									1	1			
	1	2												
	1													
				3							1			
			1											
	1			1										
			1											
	1	1			1									
1											1			
	2	1												
				1										
23	107	52	3	72	20	12	2	1	1	2	25	1	2	6

TABLE I.—DEATHS BY OCCUPATIONS.—

OCCUPATIONS.	CLASS III.—*Continued.*									CLASS IV. DEV. DIS. *Metamorphici*	CLASS V.—			
	ORDER 5.—DISEASES OF THE URINARY SYSTEM.—*Neprhiciti.*								O. 8	O 3. DEV. DIS. OLD PEOPLE. —*Geratici.*	ORDER 1.—			
	Calculus (Stone).	Cystitis (Inflammation of Bladder).	Diabetes.	Ischuria (Retention of Urine).	Lithiasis (Gravel).	Morbus Prostaticus (Diseased Prostrate).	Nephria (Bright's Disease).	Nephritis (Inflammation of Kidneys).	Abscessus (Abscess).	Senectus (Old Age).	Ambusta (Burns and Scalds).	Amputatio (Amputation).	Concussio (Concussion).	Contusion.
Students														
Stonecutters							1							
Shoemakers		1						4	1	11				
Sailors							1	2		2				
Saddlers and Harness-makers									1	1				
Seamstresses			1							1				
Servants							1		1	5				
Soldiers and Pensioners					1			1		15				
Tinsmiths														
Teamsters										2				
Tavern-keepers								1		3				
Teachers (Male)				1				2	1	9				
Teachers (Female)		1												
Telegraph Operators														
Tailors			1	1			2	1		5				
Tanners and Curriers	1													
Tobacconists and Cigar-makers														
Undertakers														
Weavers		1							1	11				
Watchmakers and Jewelers														
Totals	6	42	34	7	19	3	58	69	31	923	7	1	1	2

CAUSES OF DEATHS, 1883—*Concluded.*

VIOLENCE TENDING TO SUDDEN DEATH.—*Thanatici.*																	
Accident and Negligence.										Ord. 3—Homicide.	Order 4.—Suicide.				Ord. 5—Execution.		
Explosion.	Fracture.	Gelatio (Freezing).	Ictus Fulminis (Lightning).	Morsus Serpentis (Snake-bite).	Suffocatio (Suffocation).	Submersio (Drowning).	Venenatio (Poison).	Vulnera (Wounds).	Killed by Cars.	Murder and Manslaughter.	Submersio (Drowning).	Suspendium (Hanging).	Venenatio (Poison).	Vulnera (Wounds).	Suspendium (Hanging).	Other Causes of Death.	Total.
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	10
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	20
....	....	....	....	....	....	....	2	1	1	....	....	....	....	....	....	1	102
....	....	....	....	....	....	5	....	1	....	....	1	....	....	....	....	....	28
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	20
....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	32
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	2	70
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	56
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	13
....	1	....	....	....	....	....	....	5	1	....	....	....	....	....	....	....	33
....	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....	3	77
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	41
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	21
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	6	54
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9
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H. S. CREWE,
Inspector.

DETAILED REPORT

OF THE

INSPECTOR OF INSURANCE

1884.

Printed by Order of the Legislative Assembly.

Toronto:
PRINTED BY "GRIP" PRINTING AND PUBLISHING CO. FRONT ST.
1884.

CONTENTS.

Typographical error on p. 29, 4th line, for \$58,403 85 read \$5,840 85.

DETAILED REPORT

OF THE

INSPECTOR OF INSURANCE,

FOR THE

YEAR ENDING 31ST DECEMBER, 1883.

The Honourable A. McL. Ross, M.P.P.,

Provincial Treasurer, Toronto.

SIR,—Having previously submitted, in printed form. an Abstract Report of Insurance Companies' Statements for the year ending 31st December, 1883, I have now the honour to submit the Detailed Report as provided by the Statute 42 Vic., chap. 25.

This Report includes :—

I. Detailed Statements of Joint Stock Life Insurance Companies ;

II. Detailed Statements and Synoptical Tables of Joint Stock Fire Insurance Companies :

III. Detailed Statements and Synoptical Tables of Mixed Mutual Fire Insurance Companies ;

IV. Detailed Statements and Synoptical Tables of Strictly Mutual Fire Insurance Companies :

V. Comparative Summary of Assets and Premium Notes of Mutual Companies of all Classes : and

VI. Register of Insurance Companies brought up to 1st December, 1884.

I have the honour to be,

Sir,

Your obedient servant,

J. HOWARD HUNTER,

Inspector.

JOINT STOCK LIFE INSURANCE COMPANIES.

YEAR ENDING 31ST DECEMBER, 1883.

JOINT STOCK LIFE INSURANCE COMPANIES

YEAR ENDING 31st DECEMBER, 1883.

THE LONDON LIFE INSURANCE COMPANY.

HEAD OFFICE, LONDON.

Incorporated March, 1874.

President—JOSEPH JEFFREY. | *Manager*—J. G. RICHTER.

Subscribed Capital, $223,000.00.

Amount paid up in cash, $33,650.00.

Deposited with the Treasurer of Ontario, Par value, $60,700 ; estimated market value, $75,917.

ASSETS.

Amount of loans secured by mortgage			$800 00
" Canadian stocks owned by the Company absolutely, viz. :—			
Shares.	Par val. of Paid-up Stock.	Estimated Market val.	
818 Ontario L. & D. Company	$40,900 00		
32 Huron and Erie L. & S. Company	1,600 00		
621 Ontario L. & S. Company 10% paid	6,210 00		
425 Dominion S. & I. Society	21,250 00		
100 Canadian S. & L. Company	5,000 00		
50 Agricultural S. & L. Company	2,500 00		
	$77,460 00	$98,404 00	99,404 00
Amount of interest accrued and unpaid 31st December, 1882			3,051 74
" unpaid notes for first year's premiums only, due during 1884		$961 45	
" deferred half and quarter premiums required to complete full year's premiums on policies in force		5,012 11	
" loans on Company's policies		1,545 00	
			7,518 56
Total assets			$109,774 30

LIABILITIES.

Amount of Losses remaining unpaid at 31st December, 1883		$500 00
Amount of money borrowed, with interest		220 62
Re-insurance reserve for Policies in force calculated on the basis of the Hm. Mortality Table of the Institute of Actuaries of Great Britain, with interest at 4½ per cent., as per Actuary's certificate		$88,217 15
Advance Premiums		147 78
Due or accrued for Salaries		188 33
" " Advertising		24 00
" " Commission		240 89
Due on account of Stationery		5 80
" " Travelling Expenses		55 00
" " Medical Fees		19 50
Due to Company's Solicitors		1,943 22
		$91,557 29

INCOME.

Balance in Molson's Bank, London (not extended) $4,442 63		
Cash Premiums—Life	$19,839 39	
" Accident	91 70	
		19,931 09
Interest on deferred premiums	205 45	
On investments	5,970 58	
		6,176 03
Total income		$26,107 12

EXPENDITURE.

Amount paid for loan on Company's Stocks		$9,587 39
" " " Policies		650 00
Amount of claims paid :—		
Death losses	$10,336 07	
Accident losses	67 49	
		$10,403 56
Amount paid for policies surrendered		1,914 26
Re-insurance premiums		63 70
General Expenses :—		
Salaries	$3,343 12	
Actuaries' fees	28 48	
Medical examiners' fees	326 00	
Commission to agents	1,749 60	
Legal charges	305 29	
Travelling expenses	800 45	
Advertising	91 87	
Printing, stationery and books	269 85	

EXPENDITURE.—*Continued.*

Postage	135 75	
Statutory assessment and Government fees	80 27	
Newspapers and other periodicals	31 45	
Office furniture	9 25	
Rent	512 50	
Taxes	95 82	
Light and cleaning	43 20	
Telegrams	6 52	
Exchange	31 03	
Express	3 50	
Guarantee bond	54 17	
Petty Expenses	12 72	
		$7,930 84
Total expenditure		$30,549 75

MISCELLANEOUS.

During year ending 31st December, 1883 :

Number of Policies issued	134
" " revived	2
" " paid up, issued	11
" " not taken up	16
" " surrendered	7
" " cancelled	1
" " lapsed	87
" " become claims	14
" " in force on the Company's books, 31st December, 1883, as per Actuary's certificate	862
Amount of Insurances in force as per said certificate	$776,778 57

LIST OF STOCKHOLDERS.

NAME.	Residence.	Amount Subscribed.	Amount paid up in Cash.
Arnott, H	London	$2000 00	$300 00
Bullen, W. F	"	1000 00	150 00
Bowman, W	"	2000 00	300 00
Blinn, H. W	"	1000 00	150 00
Birtwistle, P	"	2000 00	300 00
Brummitt, R	"	1000 00	150 00
Carey, W	Hamilton	1000 00	150 00
Emery, A. S	London	11000 00	1650 00
Elliott, J. H	"	6000 00	900 00
Fitzgerald, Miss M. O	Manitoba	2000 00	300 00
Fitzgerald, Miss G. B	"	1000 00	150 00
Fitzgerald, W. W	"	800 00	120 00
Green, T	London	1000 00	150 00
Goodhue, C	"	8000 00	1200 00
Harris, E. W	"	21800 00	3270 00
Harris, G. B	"	40000 00	6000 00
Hellmuth, Right Rev. Isaac	" England	5000 00	750 00
Jeffery, Joseph	"	15000 00	2250 00
Johnston, J. G	"	2000 00	300 00
Milne, J	"	1000 00	150 00
Milne, Mrs. E	"	200 00	30 00
Mills, J	"	2000 00	300 00
Munro, C., Estate of	St. Thomas	3000 00	450 00
Moffatt, Col. J	London	500 00	125 00
Magee, J	"	1000 00	150 00
McClary, J	"	1000 00	150 00
Macfie, D	"	25000 00	3750 00
O'Callaghan, T.D	"	1000 00	150 00
Ontario Investment Association	" assignee of R. C. Macfie.	27000 00	4050 00
Powell, A. B.	"	500 00	125 00
Ryerson, Rev. E., Estate of	Toronto	200 00	30 00
Reaves, G	Montreal	5000 00	750 00
Smallman, T. H	London	4000 00	600 00
Smith, F	"	2000 00	300 00
Scandrett, J	"	2000 00	300 00
Stewart, J	"	5000 00	750 00
Taylor, E. A. (in trust)	"	1000 00	150 00
Walker, Col. J	"	2000 00	300 00
Woodruff, W., M.D	"	5000 00	750 00
Waterman, H	Buffalo	1000 00	150 00
Wright and Durand	London	2000 00	300 00
Webb, W	St. Thomas	1000 00	250 00
Wright, J	London	7000 00	1050 00
Total		$223,000 00	$33,650 00

JOINT STOCK FIRE INSURANCE COMPANIES.

YEAR ENDING 31ST DECEMBER, 1883.

JOINT STOCK FIRE INSURANCE COMPANIES.

YEAR ENDING 31st DECEMBER, 1883.

HAND-IN-HAND INSURANCE COMPANY, MUTUAL AND STOCK.—

See under "MIXED MUTUAL COMPANIES."

MERCANTILE FIRE INSURANCE COMPANY.

HEAD OFFICE, WATERLOO.

Commenced business 1st November, 1875.

President—I. E. BOWMAN. | *Secretary*—P. H. SIMS.

Authorized Capital, $500,000.00.

Subscribed Capital, $200,000.00. Paid up, $20,000.00.

Deposited with Treasurer of Ontario, $20,100.00.

Statement for the year ending 31st December, 1883.

ASSETS.

Mortgages.

Location of Property Covered.	Cash Value of Property.	Amount of Mortgages.	
Woolwich Township	$20,000 00	$4,000 00	
Wellesley "	25,500 00	8,100 00	
Peel "	31,200 00	12,600 00	
Waterloo "	19,500 00	8,000 00	
			$32,700 00
	$96,200 00		
Cash value of debentures			8,500 00
Interest due, accrued and unpaid			1,352 86
Cash on hand in head office		$3,376 51	
" deposit at Molson's Bank, Waterloo		5,059 29	
			8,435 80
Agents' balances			2,687 66
Bills Receivable			4,766 30
Total assets			$58,442 62

LIABILITIES.

Amount of claims for losses adjusted but not due	$2,040 00
Losses reported	460 00
Unearned premiums, being 50 per cent. of gross premiums	33,905 93
Dividends declared but not yet due	1,200 00
Total liabilities except capital stock	$37,605 93
Capital stock paid up in cash	$20,000 00

Income.

Gross premiums received in cash		$65,788 53
Cash received for reinsurance on policies become claims		7,035 35
Received for interest from all sources		2,595 82
" Carpenter's risks and transfer fees		410 22
Total income		$75,829 92

Expenditure.

Net amount paid during the year for losses occurring in years prior to 1883	$1,050 00	
Amount paid for losses occurring during the year 1883	47,881 47	
Total amount paid during year for said losses		$48,931 47
Amount paid for reinsurance premiums		2,740 17
Amount paid for dividends of 1882		1,600 00
Amount paid for refunds and cancelled premiums		4,312 05
Expense Account:		
Commission and brokerage	$9,453 50	
Salaries, fees, and all other charges of officials for the year	3,651 40	
Travelling expenses and adjusting losses	747 04	
Fuel, light, and cleaning	40 94	
Printing and advertising	491 35	
Express charges	58 80	
License fee and statutory assessment	177 73	
Rent	100 00	
Commercial agency	50 00	
Books and stationery	346 46	
Bank exchange	106 04	
Postage and telegraphing	515 26	
Taxes	12 00	
Canadian Fire Underwriters' Association	44 12	
Sundry charges	61 20	
		$15,855 84
Total expenditure		$73,439 53

MISCELLANEOUS.

——	No. of Policies.	Amount.
		$ c.
Policies in force at date of last statement	4,190	3,960,919 00
Taken during the year—new and renewed	4,537	4,765,377 00
Total	8,727	8,726,296 00
Deduct expired and cancelled	3,738	3,687,895 00
In force at Dec. 31st, 1883	4,989	5,038,401 00
Of which was reinsured	....	232,957 00
Net risks carried by Company	....	4,805,444 00

LIST OF STOCKHOLDERS.

Name.	Residence.	Amount Subscribed.	Amount paid up in cash.
		$ c.	$ c.
Allenby, F. G	Galt	4000 00	400 00
Bowman, J. E	St. Jacob's	12000 00	1200 00
Bowers, Cyrus	Berlin	5000 00	500 00
Bowman, J. D	"	1000 00	100 00
Buckborrough, D	Waterloo	1000 00	100 00
Bricker, Jacob	"	2000 00	200 00
Ballantyne, Thos	Stratford	1000 00	100 00
Bowlby, D. S., M.D	Berlin	10000 00	1000 00
Boye, Ernst	Baden	1000 00	100 00
Biscoe, Frederick	Guelph	1000 00	100 00
Bellinger, Theo	Waterloo	500 00	50 00
Bowman, J. S	Arthur	500 00	50 00
Briethaupt, L	Berlin	1200 00	120 00
Bishop, J. H	Guelph	2000 00	200 00
Colquhoun, F	Waterloo	3500 00	350 00
Cameron, Wm	Port Elgin	500 00	50 00
Caw, Wm., M.D	Parkhill	1000 00	100 00
Doering, Geo	Wellesley	3100 00	310 00
Day, T. J	Guelph	1000 00	100 00
Doering, John E	Wellesley	500 00	50 00
Dickson, Wm	Parkhill	500 00	50 00
Erb, E	Preston	1000 00	100 00
Eccles, Daniel	Watford	500 00	50 00
Farrish, Wm	Rockwood	1000 00	100 00
Fennel, John	Berlin	500 00	50 00
Fletcher, Ann Mrs	Rockwood	3200 00	320 00
Fink, Paul	Waterloo	1000 00	100 00
Gibbs, John	Parkhill	2000 00	200 00
Gissing, F. J	Parkdale	1000 00	100 00
Hughes, J. B	Waterloo	2000 00	200 00
Hilliard, Thomas	"	1000 00	100 00
Hendry, Charles	Conestogo	5000 00	500 00
Hunter, Wm	Guelph	2000 00	200 00
Hay, W. G	Listowel	1000 00	100 00
Hough, James	Guelph	1000 00	100 00
Hogg, David N	"	5000 00	500 00
Innes, James	"	2000 00	200 00
Irwin, John	Strathroy	1000 00	100 00
Jackson, Henry F. J	Brockville	5000 00	500 00
Jaffray, R	Galt	1000 00	100 00
Killer, Nicholas	Waterloo	1000 00	100 00
Kaufman, S	Washington	5000 00	500 00
Kumpf, C	Waterloo	1000 00	100 00
Kranz, Hugo	Berlin	1000 00	100 00
Livingston, James	Baden	2000 00	200 00
Lockie, James	Waterloo	2500 00	250 00
Lautenschlager, P	Berlin	2000 00	200 00
Moore, George	Guelph	3000 00	300 00
Miller, Alex	Berlin	1000 00	100 00
Melvin, Robert	Guelph	5000 00	500 00
Massie, James	Toronto	2000 00	200 00
Merner, Fred	New Hamburg	1000 00	100 00
Morton, W., M.D	Wellesley	500 00	50 00
Meredith, J. S	Hamilton	500 00	50 00
Martin, Wm. John	Orangeville	3000 00	300 00
Oelschlager, Wm	Berlin	5000 00	500 00
Peffers, Joseph	Listowel	500 00	50 00
Petrie, A. B	Guelph	3000 00	300 00
Reiner, John G	Wellesley	2000 00	200 00
Reynolds, R. T., M.D	Berlin	2000 00	200 00
Ruppel, John	Elmira	500 00	50 00
Snyder, J. B	St. Jacobs	10000 00	1000 00
Snider, E. W. B	"	6000 00	600 00
Shuh, John	Waterloo	2000 00	200 00
Snider, John B	"	2000 00	200 00
Snider, Henry	Bloomingdale	2000 00	200 00

LIST OF STOCKHOLDERS—*Continued.*

Name.	Residence.	Amount Subscribed.	Amount paid up in cash.
		$ c.	$ c.
Snider Simon	Waterloo	3000 00	300 00
Sims, P. H.	"	3000 00	300 00
Snider, Wm.	"	2500 00	250 00
Stewart, Wm	Guelph	1000 00	100 00
Scott, John A	Stratford	1000 00	100 00
Staebler, J. M	Berlin	1000 00	100 00
Snider, Fred	"	1000 00	100 00
Stuebing, Wm	Waterloo	500 00	50 00
Sawtell, R. W	Woodstock	1000 00	100 00
Scott, J. W	Listowel	1000 00	100 00
Shields, James	"	1000 00	100 00
Scoon, John	Guelph	500 00	50 00
Trow, James	Stratford	5000 00	500 00
Towner, George	Listowel	1000 00	100 00
Walden, J. W., M.D	Waterloo	3000 00	300 00
Winger, Peter	Elmira	1000 00	100 00
Wilkes, Clara M	Brantford	1000 00	100 00
Wilkes, Alfred J	"	1000 00	100 00
Wright, G W., M.D	Berlin	1000 00	100 00
Wright & Durand	London	500 00	50 00
Webb, J. H.	Waterloo	4000 00	400 00
Young, Wm	"	11000 00	1100 00
Zoeger, John	Newton	500 00	50 00
Zinkann, J. N	Lisbon	500 00	50 00
Total		$200,000 00	$20,000 00

QUEEN CITY FIRE INSURANCE COMPANY.

HEAD OFFICE, TORONTO.

Commenced business 1st July, 1871.

President—W. H. Howland. | *Secretary*—Thomas Walmsley

Authorized Capital, $100,000.

Subscribed Capital, $100,000. Paid up, $50,000.

Securities deposited with Treasurer of Ontario, $10,000.

Statement for year ending 31st December, 1883.

Assets.

Value of real estate held by Company, being land and building on the west side of Church Street, Toronto, where the head offices of the Company are situated		$56,663 57
Mortgages :—		
Etobicoke Township	$ 400 00	
Toronto "	17,500 00	
Scarboro' "	3,000 00	
York "	2,000 00	
Toronto City	4,901 00	
Total amount of loans secured by mortgage	$27,801 00	
Secured loans	3,880 00	
		31,681 00
Deposited with Dominion Bank, Toronto		24,195 88
Interest accrued and unpaid on all loans as above		2,182 66
Agents' balances		2,485 41
Accrued rents		2,959 34
Office furniture (not extended)	$3,265 30	
Total assets		$120,167 86

Liabilities.

Unpaid losses..	$ 3 00	
Unearned premiums, being 50 per cent. of gross premiums..	8,718 74	
Total liabilities, except capital stock		$8,721 74
Capital stock paid up in cash		$50,000 00

Income.

Gross premiums received in cash	$14,309 75	
Received for interest and dividends on stocks and all other sources	2,297 41	
Rents...	1,995 55	
Re-insurance	9 05	
Total income		$18,611 76

Expenditure.

Amount paid during the year for losses occurring in previous years	$ 316 58	
Amount paid for losses occurring during the year 1882	3,877 45	
" " " re-insurance premiums	2,031 72	
		$6,225 75
Amount of dividends paid during the year	$2,500 00	
Paid or allowed for commission, or brokerage	1,282 91	
" for salaries, fees, and all other remuneration of officials.	4,200 00	
" " rent	500 00	
" " vote to President at annual meeting	1,000 00	
" " assessment and license fee	124 66	
" " books and stationery	46 20	
" " printing	61 19	
" " advertising	58 90	
" " scrutineers' fees annual meeting	10 00	
" " assessment Board of Underwriters	9 08	
" " telephone	12 50	
" " legal expenses	10 00	
" " express charges	3 30	
		$9,818 74
		$16,044 49

MISCELLANEOUS.

Fire Risks.	No.	Amount.
Policies in force (gross) at date of last statement	1444	2,157,707 69
Taken during the year, new and renewed	1249	1,604,529 50
Total	2693	3,762,237 19
Deduct expired and cancelled	1297	1,704,821 21
Gross in force at end of year	1396	2,057,415 98
Of which was re-insured	....	306,875 00
Net risks carried by Company Dec. 31st, 1883	....	1,750,540 98

Total No. of policies 1,396

Total in force $2,057,415 98

LIST OF STOCKHOLDERS.

Name.	Residence.	Amount subscribed.	Amount paid up in Cash.
		$ c.	$ c.
Austin, James	Toronto	2000 00	1000 00
Badenach, William	"	1000 00	500 00
Close, P. G	"	1000 00	500 00
Copp, Clark & Co	"	1000 00	500 00
Downey, J	"	1000 00	500 00
Elliott, R. W	"	2500 00	1250 00
English, C. E	"	12500 00	6250 00
Harvey, A	"	500 00	250 00
Hessin, William	"	500 00	250 00
Howland, Sir W. P	"	4000 00	2000 00
Howland, W. H.	"	10000 00	5000 00
Maclennan, James.	"	5000 00	2500 00
Maclennan, James, Walmsley, Thomas, W. H. Howland, Trustees	"	5000 00	2500 00
Macnab, John	"	3000 00	1500 00
McWilliams, W. G	"	500 00	250 00
Roaf, J. R	"	1500 00	750 00
Roaf, William	"	1500 00	750 00
Scott & Walmsley	"	25500 00	12750 00
Scott, Hugh	"	5000 00	2500 00
Scott, James	"	3000 00	1500 00
Scott, J. G	"	1000 00	500 00
Strathy, H. H	"	1000 00	500 00
Walmsley, William	"	1000 00	500 00
Walmsley, Thomas	"	10000 00	5000 00
Watson, James	"	1000 00	500 00
Total		100,000 00	50,000 00

RECAPITULATION

OF

ASSETS, LIABILITIES, INCOME AND EXPENDITURE

OF ALL JOINT STOCK FIRE INSURANCE COMPANIES.

JOINT-STOCK FIRE COMPANIES.

ASSETS FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Real Estate.	Bonds, Mortgages, Stocks, and other Investments.	Interest Accrued.	Rents.	Cash.	Agents' Balances.	Bills Receivable.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
*Mercantile	....	41,200 00	1,352 86	....	8,435 80	2,687 66	4,766 30	58,442 62
*Queen City	56,663 57	31,681 00	2,182 66	2,959 34	24,195 88	2,485 41	....	120,167 86
Total	56,663 57	72,878 00	3,535 52	2,959 34	32,631 68	5,173 07	4,766 30	178,610 48

LIABILITIES FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Unpaid Losses.	Unearned Premiums Calculated at 50 per cent.	Other Liabilities.	Total Liabilities except Capital Stock.	Paid-up Capital Stock.	Grand Total of Liabilities.	Number of Policies in Force.	Total Amount at Risk.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.		$ c.
Mercantile	2,500 00	33,905 93	1,200 00	37,605 93	20,000 00	57,605 93	4,989	5,038,401 00
Queen City	3 00	8,718 74	....	8,721 74	50,000 00	58,721 74	1,396	2,057,415 98
Total	2,503 00	42,624 67	1,200 00	46,327 67	70,000 00	116,327 67	....	7,095,816 98

*Government Deposits, as follows:—Mercantile, $20,100.00; Queen City, $10,000.00.

JOINT-STOCK FIRE COMPANIES.

INCOME FOR THE YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Gross Premiums.	Interest and Dividends.	Rents.	Cash from Re-insurances.	Cash from Other Sources.	Total Income.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mercantile	65,788 53	2,595 82	....	7,035 35	410 22	75,829 92
Queen City	14,309 75	2,297 41	1,995 55	9 05	....	18,611 76
Total	80,098 28	4,893 23	1,995 55	7,044 40	410 22	94,441 68

EXPENDITURE FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Dividends.	Losses.	Re-insurance Premiums.	Expenses of Management.				Total Expenditure.
				Commission.	Salaries.	All Other Expenses.	Total.	
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mercantile	1,600 00	48,931 47	7,052 22	9,453 50	3,651 40	2,750 94	15,855 84	73,439 53
Queen City	2,500 00	4,194 03	2,031 72	1,282 91	4,200 00	1,835 83	7,318 74	16,044 49
Total	4,100 00	53,125 50	9,083 94	10,736 41	7,851 40	4,586 77	23,174 58	89,484 02

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

YEAR ENDING 31st DECEMBER, 1883.

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

YEAR ENDING 31st DECEMBER, 1883.

GORE DISTRICT MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, GALT.

Commenced business 16th October, 1839.

President—Hon. James Young, M.P.P. | *Secretary*—R. S. Strong.

Unassessed premium note capital, $96,974.95.

Securities deposited with Treasurer of Ontario, par value, $6,520; estimated market value, $6,820.00.

Assets.

Loans secured by mortgages		$14,700 00	
Market value of shares, bonds, debentures and securities other than the foregoing		6,300 00	
Actual cash on hand at head office	$1,019 60		
Cash on deposit to the Company's credit, not drawn against, in the following chartered banks:			
Federal Bank, Toronto	8,000 00		
Merchants' Bank, agency at Galt	12,958 66		
Bank of Commerce, "	8,330 17	30,308 43	51,308 43
Cash in agents' hands, acknowledged by them to be due and considered good			3,990 02
Amount unpaid of assessments levied during 1883			125 11
" of premium notes in force, after deducting all payments thereon and assessments levied		$96,974 95	
Less residue of premium notes given by the Company for re-insurance		121 87	
Net premium notes			96,853 08
Amount of interest accrued			565 35
Total assets			$152,841 99

Liabilities.

Amount of losses resisted	$1,800 00	
" supposed or reported	3,860 00	
		$5,660 00
Amount required to reinsure all outstanding risks taken on the cash system, being fifty per cent. of gross premiums on all cash system policies in force at 31st December, 1882		22,411 41
Total liabilities		$28,071 41

RECEIPTS.

Cash at head office, as per last statement (not extended)	$601 42	
Cash received as first payments, being part payment of premium notes		$6,521 60
" for assessments levied in 1883		20,404 21
" " " years prior to 1883		1,235 20
" for premiums on cash system		29,974 72
" for interest during 1882		2,680 20
" from transfer fees		56 80
" for extra premiums		241 48
Total receipts		$61,114 21

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents	$6,631 86	
" bonus to agents	1,163 77	
		$7,795 63
" law costs		242 97
" fuel and light		43 40
" investigation and adjustment of claims		208 58
" statutory assessment or certificate		202 54
" printing, stationery and advertising		566 93
" rent and taxes		292 60
" salaries, directors' and auditors' fees		5,350 41
" travelling expenses		578 98
" postage, telegrams and express		523 68
" incidentals		173 50
Total expenses of management		$15,979 22

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	35,350 81
" " " prior to 1883	848 08
" reinsurances	3,136 23
" rebate, abatements and returned premiums	1,078 69
Total expenditure	$56,393 03

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	One year or less.	Three years.	Total.
	$ c.	$ c.	$ c.
Mutual	3,000 00	1,714,160 47	1,717,160 47
Cash	1,103,929 72	3,056,566 12	4,160,495 84
Total	1,106,929 72	4,770,726 59	5,877,656 31
Reinsured.			
Mutual	77,820 81		
Cash	93,928 66		
Total	171,749 47		171,749 47
Net risks carried by Company, Dec. 31st, 1883			$5,705,906 84

MOVEMENT IN RISKS.

——	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	1,294	1,587,889 00
" new and renewed during 1883	533	718,644 00
Gross number during 1883	1,827	2,306,533 00
Less expired and cancelled in 1883	493	589,372 53
Net risks in force on mutual system, 31st December, 1883	1,334	1,717,160 47
Cash System.		
Policies in force 31st December, 1882	4,631	3,911,023 00
" new and renewed during 1883	1,897	1,797,038 99
Gross number during 1883	6,528	5,708,061 99
Less expired and cancelled in 1883	1,756	1,547,566 15
Net risks in force on cash system, 31st December, 1883	4,772	4,160,495 84

BUSINESS TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	248 00	133,889 00	134,137 00
Amount of all premium notes, after deducting all payments thereon and assessments levied	....	....	96,974 95
Amount of premium notes received during the year 1883	248 00	57,967 00	58,215 00
Reinsurance. Amount of premium notes given by the Company for reinsurance	....	159 50	159 50
Less payments thereon	....	37 63	37 63
Residue	....	121 87	121 87

HAND-IN-HAND INSURANCE COMPANY, MUTUAL AND STOCK.

HEAD OFFICE, TORONTO, ONT.

Commenced business July 1st, 1873.

President—W. H. HOWLAND. | *Secretary*—HUGH SCOTT.

By Act, 42 Vic., Cap. 85, Ontario Statutes, 1879, power was granted to this Company to raise Capital Stock and do business on the Cash System.

Authorized Stock Capital	$500,000 00
Subscribed "	100,000 00
Paid up in cash "	20,000 00
Unassessed premium note capital	5,915 74
Securities deposited with Treasurer of Ontario	10,000 00

LIST OF STOCKHOLDERS.

NAME.	Residence.	Amount Subscribed for.	Amount paid up in Cash.
		$ c.	$ c.
Austin, James	Toronto	5,000 00	1,000 00
Campbell, A. H.	do	5,000 00	1,000 00
Coffee, L. & Co.	do	5,000 00	1,000 00
Dixon, B. Homer	do	5,000 00	1,000 00
Downey, Jno.	do	5,000 00	1,000 00
Elliot, Wm.	do	5,000 00	1,000 00
Fisher, D.	Bowmanville	5,000 00	1,000 00
Gzowski, Col. C. S.	Toronto	5,000 00	1,000 00
Howland, Sir W. P.	do	5,000 00	1.000 00
Howland, W. H.	do	5,000 00	1,000 00
Macpherson, Sir D. L.	do	5,000 00	1,000 00
Maclennan, Jas., Q.C.	do	5,000 00	1,000 00
McMaster, Hon. Wm.	do	5,000 00	1,000 00
Smith, Prof. Goldwin	do	5,000 00	1,000 00
Smith, Larratt W. D. C. L.	do	5,000 00	1,000 00
Smith, Henry A.	London	5,000 00	1,000 00
Scott, James	Toronto	5,000 00	1,000 00
Smith, Hon. D.A.	Montreal	5,000 00	1,000 00
Scott & Walmsley	Toronto	5,000 00	1,000 00
Thomson, Wm.	do	5,000 00	1,000 00
	Total	100,000 00	20,000 00

ASSETS.

Mortgages:

Property in Toronto	$13,750 00	
Shares, Debentures and other Securities	21,543 00	
Cash on deposit to Company's credit in Ontario Bank	3,957 39	
		$39,250 39
Accrued interest		2,378 92
Cash in agents' hands		1,922 69
Undertakings, unassessed		5,915 74
		$49,467 74

Liabilities.

Amount of losses	$1,226 27
Amount required to reinsure all outstanding risks taken on cash system, being 50 per cent. of gross premiums on all cash system policies in force at December 31st. 1883	5,8403 85
Agents' balances	1,353 08
Directors' fees	605 00
Total liabilities	$9,025 20

Income.

Cash received for premiums on cash system	$15,323 50
" as first payments or deposits being part payment of premium notes	6,964 02
" for interest	1,799 04
Total income	$24,086 56

Expenditure.

Cash paid for commission to agents	3,587 87	
" statutory assessment or certificate	111 01	
" printing, stationery and advertising	149 14	
" salaries, Directors' and Auditors' fees	1,085 00	
" petty expenses	151 50	
Expenses of management		5,084 52
" losses prior to 1883	618 42	
" losses during 1883	12,727 64	
" reinsurances	1,586 48	
" rebate, abatements and returned premiums	1,535 44	
" dividends	2,000 00	
Total expenditure		$23,552 50

CURRENCY OF RISKS.

Amount covered by policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Four years.	Total.
Insurance.	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	475,325 00	3,650 00	174,034 00	7,500 00	660,509 00
Cash	952,226 82	3,366 66	380,671 48	2,500 00	1,338,764 96
Total	1,427,551 82	7,016 66	554,705 48	10,000 00	1,999,273 96
Reinsurance.					
Mutual	66,441 07				66,441 67
Cash	31,450 00		19,978 50		51,428 50
Total	97,891 67		19,978 50	10,000 00	117,870 17
Net risks carried by company, Dec. 31, 1883	1,329,660 15	7,016 66	534,726 98	10,000 00	1,881,403 79

MOVEMENT IN RISKS.

———	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	469	816,304 81
" new and renewed during 1883	395	699,542 00
Gross number during 1883	864	1,515,846 81
Less expired and cancelled in 1883	485	855,337 81
Net risks in force on Mutual system 31st December, 1883	379	660,509 00
Cash System.		
Policies in force 31st December, 1882	477	918,647 00
" new and renewed during 1883	808	1,466,480 98
Gross number during 1883	1,275	2,385,127 98
Less expired and cancelled in 1883	575	1,046,363 02
Net risks in force on Cash system 31st December, 1883	700	1,338,764 96

BUSINESS TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS.

On Policies in force December 31st, 1883.

———	One year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by company, and legally liable to assessment	4,179 02	1,736 72	5,915 74
Amount of all premium notes, after deducting all payments thereon and assessments levied	....	....	5,915 74
Amount of premium notes received during the year 1883,	5,995 22	966 05	6,961 27

THE ONTARIO MUTUAL FIRE INSURANCE COMPANY.

Commenced business 2nd September, 1867.

President—Andrew McCormick. | *Secretary*—P. F. Boyle.

Unassessed premium note capital, $11,198.76.

Deposited with Treasurer of Ontario, par value, $2,000; estimated market value, $2,300.

Assets.

Market value of shares, bonds, debentures and securities		$2,016 26
Actual cash on hand at head office	$26 06	
Cash on deposit to the Company's credit, not drawn against,		
" in the Federal Bank agency, at London	1,907 67	
" " Dominion Savings Society at London	78 31	
		2,012 04
Cash in agents' hands, acknowledged by them to be due, and considered good		2,658 07
Amount unpaid of assessments levied during 1883		647 64
" " " in prior years (not extended)	$5,113 75	
Amount of notes, or due bills, less than one year overdue		785 68
" " " more " (not extended)	$1,800 56	
" premium notes in force after deducting all payments thereon and assessments levied	11,198 76	
Less premium notes given for reinsurance	119 07	
		11,079 69
Total assets		$19,199 38

Liabilities.

Amount of losses adjusted	$2,985 93
" required to reinsure all outstanding risks taken on the cash system, being fifty per cent. of gross premiums on all cash system policies in force at 31st December, 1883	7,515 25
Due Agents	159 20
Total liabilities	$10,660 38

RECEIPTS.

Cash at head office, as per last statement, (not extended)........	$64 11	
Cash received for membership fees (not being part payment of premium notes)........		$1,392 91
Cash received as first payments, being part payments of premium notes ..		947 70
" for assessments levied in 1883........		5,576 60
" " " years prior to 1883........		579 96
" for premiums on cash system........		4,202 89
" for interest during 1883........		213 00
" from fees, and extra risks........		119 23
" from other sources........		30 00
Total receipts........		$13,062 29

EXPENDITURE.

Expenses of Management:

Amount paid to agents for commission........		$2,077 48
" for law costs........		137 97
" fuel and light........		43 18
" statutory assessment or certificate........		135 59
" printing, stationery and advertising........		150 83
" rent and taxes........		120 00
" salaries, directors' and auditors' fees........		2,968 32
" travelling expenses........		130 75
" postage, telegrams, and express........		227 96
" interest........		43 95
Total expenses of management........		$6,036 03

Miscellaneous Payments:

Cash paid for losses which occurred prior to 1883........	$5,593 00	
" " " during 1883........	2,166 59	
		7,759 59
" rebate, abatement and returned premiums........		53 42
Total expenses........		$13,849 04

CURRENCY OF RISKS.

Amount covered by policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Total.
Insurance.	$ c.	$ c.	$ c.	$ c.
Mutual........	552,645 00	568,823 74	394,316 30	1,515,785 04
Cash........	564,863 00	494,025 05	434,570 00	1,493,458 05
Total........	1,117,508 00	1,062,848 79	828,886 30	3,009,243 09
Reinsurance.				
Mutual........	2,675 00	3,725 00	2,850 00	9,250 00
Cash........	1,750 00	3,100 00	4,200 00	9,050 00
Total........	4,425 00	6,825 00	7,050 00	18,300 00
Net risks carried by Company, December 31st, 1883........	....	....	....	2,990,943 09

MOVEMENT IN RISKS.

——	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	2,225	1,606,651 55
New and renewed during 1883	543	403,230 00
Gross number during 1883	2,768	2,009,881 55
Less expired and cancelled in 1883	759	494,096 51
Net risks in force on Mutual System, 31st December, 1883	2,009	1,515,785 04
Cash System.		
Policies in force 31st December, 1882	3,116	1,664,162 95
New and renewed during 1883	868	469,365 00
Gross number during 1883	3,984	2,133,527 95
Less expired and cancelled in 1883	1,201	640,069 90
Net risks in force on Cash System, 31st December, 1883	2,783	1,493,458 05

BUSINES TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in full force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	24,819 03	24,819 03
Amount of all premium notes, after deducting all payments thereon and assessments levied	11,198 76	11,198 76
Amount of premium notes received during the year 1883	6,906 16	6,906 16
Residue of premium notes given by the Company for reinsurance	119 07	119 07

COUNTY OF PERTH MUTUAL FIRE INSURANCE COMPANY.

FARM BRANCH.

Commenced business 1st December, 1863.

President—John Hyde, M.D. | *Secretary*—Chas. Packert.

Deposited with Treasurer of Ontario, $1,000.00.

Unassessed premium note capital, $20,623.06.

Assets.

Market value of debentures	$9,000 00	
Actual cash on hand at head office	325 36	
		$9,325 36
Caah in agents' hands acknowledged by them to be due, and considered good		192 51
Amount unpaid of assessments levied during 1883		1,535 15
" of short date notes, or due bills, less than one year overdue		589 66
" of premium notes in force, after deducting all payments thereon and assessments levied		20,623 06
Amount of interest accrued		300 00
" postage stamps		15 00
Total assets		$32,580 74

Liabilities.

Amount required to reinsure all outstanding risks taken on the cash system, being fifty per cent. of gross premiums on all cash system policies in force at 31st December, 1882	$2,852 98
Total liabilities	$2,852 98

Receipts.

Cash at head office, as per last statement (not extended)	$2,664 10	
Cash Received as first payments, being part payment of premium notes		$2,245 45
" for assessments levied in 1883		1,645 10
" for assessments levied in years prior to 1883		1,098 95
" for premiums on cash system		1,785 11
" for interest during 1883		690 25
" from Town Branch, proportion of expenses		420 11
" from extra premiums, etc		12 50
Total receipts		$7,897 47

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents		$821 14
" law costs		14 16
" fuel and light		29 40
" investigation and adjustment of claims		102 15
" statutory assessment and license		124 74
" printing, stationery and advertising		288 50
" rent and taxes		150 00
" salaries, directors' and auditors' fees		1,467 90
" travelling expenses		13 00
" postage, telegrams and express		121 05
" other expenses		19 36
Total expenses of management		$3,151 40

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	$6,340 35	
" " " " before 1883	500 00	
		6,840 35
" rebate		14 50
" sundries		5 00
" agents' accounts		224 96
Total expenditure		$10,236 21

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	Three years.	Total.
	$ c.	$ c.
Mutual	1,913,505 00	....
Cash	767,435 00	2,680,940 00

MOVEMENT IN RISKS.

—	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	1,373	1,751,860 00
" new and renewed during 1883	539	728,010 00
Gross number during 1883	1,912	2,479,870 00
Less expired and cancelled in 1883	456	566,365 00
Net risks in force on mutual system, 31st December, 1883	1,456	1,913,505 00
Cash System.		
Policies in force 31st December, 1882	793	690,200 00
" new and renewed during 1883	292	271,300 00
Gross number during 1883	1,085	961,500 00
Less expired and cancelled in 1883	217	194,065 00
Net risks in force on cash system, 31st December, 1883	868	767,435 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

—	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	28,576 12	28,576 12
Amount of all premium notes, after deducting all payments thereon and assessments levied	20,623 06	20,623 06
Amount of premium notes received during the year 1883	10,795 29	10,795 29

TOWN BRANCH.

Unassessed premium note capital, $4.516.76.

Deposited with Treasurer of Ontario, $1,000.00.

ASSETS.

Market value of debentures and securities	$4,000 00
Actual cash on hand at head office	3,005 64
Cash in agents' hands, acknowledged by them to be due, and considered good	379 51
Amount unpaid of assessments levied during 1883	407 10
" of short date notes, or due bills, less than one year overdue	265 95
" of premium notes in force, after deducting all payments thereon and assessments levied	4,516 76
" of interest due and accrued	125 00
Total assets	$12,699 96

LIABILITIES.

Amount required to reinsure all outstanding risks taken on the cash system, being fifty per cent. of gross premiums on all cash system policies in force at 31st December, 1882	$1,297 74
Total liabilities	$1,297 74

RECEIPTS.

Cash at head office, as per last statement (not extended) $3,973.15	
Cash received as first payments	$686 09
" for assessments levied in 1883	216 55
" " " years prior to 1883	318 35
" for premiums on cash system	457 77
" for interest during 1883	387 72
Cash receipts from all other sources	8 10
Total receipts	$2,074 58

EXPENDITURES.

Expenses of Management:

Amount paid for commissions to agents	$245 47
Amount paid for investigation and adjustment of claims	22 40
" " proportion of general expenses paid to Farm Branch	420 11
Total expenses of management	$687 98

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	2,339 62
" " rebate	6 05
" " agents' accounts	8 44
Total expenditure	$3,042 09

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	299,920 00	....
Cash	263,710 00	563,630 00

MOVEMENT IN RISKS.

——	Number.	Total.
Mutual System.		$ c.
Policies in force 31st December, 1882	375	268,855 00
New and renewed during 1883	150	112,875 00
Gross number during 1883	525	381,730 00
Less expired and cancelled in 1883	115	81,810 00
Net risks in force 31st December, 1868	410	299,920 00
Cash System.		
Policies in force 31st December, 1882	428	223,835 00
New and renewed during 1883	169	96,000 00
Gross number during 1883	597	319,835 00
Less expired and cancelled in 1883	107	56,125 00
Net risks in force on cash system, 31st December, 1883	490	263,710 00

BUSINESS TRANSACTED:

Non-hazardous Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	6,154 75	6,154 75
Amount of all premium notes, after deducting all payments thereon and assessments levied	4,516 76	4,516 76
Amount of premium notes received during the year 1883	2,263 60	2,263 60

VICTORIA MUTUAL FIRE INSURANCE COMPANY.

GENERAL BRANCH.

HEAD OFFICE, HAMILTON.

Commenced business November, 1863.

President—Geo. H. Mills. | *Secretary*—W. D. Booker.

Unassessed premium note capital, $3,670.80.

Deposited with Treasurer of Ontario, par value, $4,000; estimated market value, $4,277.50

Assets.

Cash on deposit to Company's credit in Bank of Hamilton		$45 75
Cash value of shares, bonds, debentures and securities		4,277 50
Cash in agents' hands, acknowledged by them to be due, and considered good		386 90
Amount unpaid of assessments levied during 1883		665 65
" " " in prior years (not extended)	$3,259 37	
" of short date notes or due bills, less than one year overdue		107 20
" " " " one year or more overdue (not extended)	$2,385 05	
" of premium notes in force, after deducting all payments thereon and assessments levied		3,670 80
" of Division Court costs	$3,157 91	
" due by Water Works Branch	2,364 20	
		5,522 11
Total assets		$14,675 91

Liabilities.

Amount of losses supposed, or reported	$164 50
" unpaid loans from banks or other sources	14,331 03
" required to reinsure all outstanding risks taken on the cash system, being fifty per cent. of gross premiums on all cash system policies in force at 31st December, 1883	5,807 98
" all other liabilities	1,733 38
Total liabilities	$22,036 89

RECEIPTS.

Cash received by Company as first payments, being part payment of premium notes	$54 98
Cash received for assessments levied in 1883	3,935 06
" " " years prior to 1883	2,241 23
" premiums on cash system	669 18
" interest	547 07
Cash receipts from all other sources	517 63
Total receipts	$7,965 15

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents, viz.	$120 62
Amount paid for law costs	236 60
" " Division Court costs	392 65
" " investigation and adjustment of claims and travelling expenses	167 06
" " interest	714 33
" " printing, stationery and advertising	130 60
" " rent and taxes, $302.18; fuel, light, $27.43; and statutory assessment and fee, $161.90	491 51
" " salaries, directors' and auditors' fees	2,624 21
" " postage, telegrams and express	205 70
" " other expenses	82 17
Total expenses of management carried out	$5,165 45

Miscellaneous Payments:

Cash paid for losses which occurred prior to 1883	790 00
" " " " during 1883	2,502 39
Reinsurance	34 79
Repayment of loans	1,000 00
Total expenditure	$9,492 63

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Total.
	$ c.	$ c.	$ c.	$ c.
Mutual			622,176 00	622,176 00
Cash	2,350 00	9,430 00	2,055,101 00	2,066,881 00
Total	2,350 00	9,430 00	2,677,277 00	2,689,057 00
Reinsured on cash system			1,000 00	1,000 00

MOVEMENT IN RISKS.

——	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	1,216	1,232,365 00
" new and renewed during 1883	25	16,157 00
Gross number during 1883	1,241	1,248,522 00
Less expired and cancelled in 1883	617	626,346 00
Net risks in force on mutual system 31st December, 1883	624	622,176 00
Cash System.		
Policies in force 31st December, 1882	4,264	3,318,243 00
" new and renewed during 1883	101	72,126 00
Gross number during 1883	4,365	3,390,369 00
Less expired and cancelled in 1883	1,765	1,323,488 00
Net risks in force on cash system 31st December, 1883	2,600	2,066,881 00

CLASSIFICATION OF RISKS:

All Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all preminm notes held by Company, and legally liable to assessment	14,464 84	14,464 84
Amount of all premium notes, after deducting all payments thereon and assessments levied	3,670 80	3,670 8
Amount of premium notes renewed during the year 1883	272 38	272 38

VICTORIA MUTUAL FIRE INSURANCE COMPANY.

HAMILTON BRANCH.

HEAD OFFICE, HAMILTON.

Commenced business November, 1863.

President—Geo. H. Mills. | *Secretary*—W. D. Booker.

Unassessed premium note capital, $30,107.35.

Assets.

Actual cash on hand at head office		$117 22
Cash in agents' hands, acknowledged by them to be due, and considered good		5 61
Amount unpaid of assessments levied during 1883		853 00
" " " in prior years (not extended)	$580 82	
Amount of short date notes or due bills, less than one year overdue		327 31
" " " one year or more overdue (not extended)	$102 49	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		30,107 35
Due by W. W. Branch		6,546 60
Division Court costs		52 81
Total assets		$38,009 90

Liabilities.

Amount of unpaid loan from Bank	$1,286 42
All other liabilities	273 70
Total liabilities	$1,560 12

Receipts.

Cash at head office, as per last statement (not extended)	$326 66	
Cash as first payments, being part payment of premium notes		$1,199 90
Cash received for assessments levied in 1882		4,253 76
" " " years prior to 1883		1,387 02
Cash received for interest during 1883		30 77
" for cash borrowed		1,286 42
" from all other sources		454 18
Total receipts		$8,612 05

Expenditure.

Expenses of Management:

Amount paid for commission		$601 43
" investigation and adjustment of claims		34 57
" Division Court costs		22 93
" printing, stationery and advertising		122 15
" rent and taxes, $150; statutory assessment, $63 05		213 05
" salaries, directors' and auditors' fees		1,387 12
" postage, telegrams and express		62 46
" fuel and light		13 71
" interest		97 05
" all other expenses		41 52
Total expenses of management carried out		2,595 99
Miscellaneous Payments:		
Cash paid for losses which occurred prior to 1883	$2,257 73	
" " " during 1883	1,650 37	
		3,908 10
" reinsurance		4 68
" loan		1,000 00
" deposits		12 50
" advanced Water Works Branch		1,208 37
Total expenditure		$8,729 64

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System	Three years.	Total.
	$ c.	$ c.
Mutual	1,281,895 00	1,281,895 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,228	1,488,454 00
Policies new and renewed during 1883	267	351,610 00
Gross number during 1883	1,495	1,840,064 00
Less expired and cancelled in 1883	433	558,169 00
Net risks on in force on mutual system 31st December, 1883	1,062	1,281,895 00

CLASSIFICATION OF RISKS.

Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	42,514 70	42,514 70
Amount of all premium notes, after deducting all payments thereon and assessments levied	30,107 35	30,107 35
Amount of premium notes received during the year 1883	11,481 16	11,481 16

WATERLOO MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WATERLOO.

Commenced business 7th March, 1863.

President—J. W. Walden, M.D. | *Secretary*—C. M. Taylor.

Unassessed premium note capital, $116,196.50.

Deposited with Government of Ontario, $14,335.00.

Assets.

Cash value of real estate, less incumbrances		$4,000 00
" shares, bonds, debentures and securities		35,082 16
Cash on deposit to the Company's credit, not drawn against, in the Molson's Bank, Waterloo	$956 07	
Cash on hand at head office	273 38	
		1,229 45
Cash in agents' hands, acknowledged by them to be due, and considered good		1,531 24
Amount unpaid of assessments levied during 1883		1,617 21
" of short date notes or due bills, less than one year overdue		4,389 95
" of premium notes in force, after deducting all payments thereon and assessments levied	$116,196 50	
Less residue of premium notes given for reinsurance	1,158 87	
		115,037 63
Amount of interest due and accrued		1,298 04
" all other assets		500 00
Total assets		$164,685 68

Liabilities.

Amount of losses reported	$1,103 00
" required to reinsure all outstanding risk taken on the cash system, being 50 per cent. of gross premiums on all cash system policies in force at 31st December, 1883	34,390 42
Amount due to agents	
Total liabilities	$35,493 42

Receipts.

Cash at head office as per last statement, (not extended)	$202 37	
Cash received as first payments, being part payment of premium notes		$13,587 45
" for assessments of 1883		20,237 05
" " " years prior to 1883		1,754 70
" premiums on cash system		39,374 30
" for interest during 1883		1,776 32
Cash receipts from transfer fees		104 00
" extra premiums		396 56
" matured debentures		200 00
" rent		100 00
Total receipts		$77,530 38

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents	$7,294 62
Amount paid for Division Court costs	33
" law costs other than above	519 94
" fuel and light	163 01
" investigation and adjustment of claims	2,477 47
" statutory assessment or certificate	350 99
" printing, stationery and advertising	1,396 22
" rent and taxes	33 00
" salaries, directors' and auditors' fees	5,195 50
" postage, telegrams and express	681 45
" other expenses	1,419 87
Total expenses of management	$19,540 40

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	53,366 51
" " " prior to 1883	285 00
" reinsurances	1,045 16
" rebate, abatement and returned premiums	1,429 75
Total expenditure	$75,666,82

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	One year or less.	Three years.	Total.
	$ c.	$ c.	$ c.
Insurance.			
Mutual		2,734,072 33	2,734,072 33
Cash	1,162,630 00	6,077,203 28	7,239,833 28
Total	1,162,630 00	8,811,275 61	9,973,905 61
Reinsurance.			
Mutual, reinsured		21,500 00	21,500 00
Cash "	62,550 00	50,075 00	112,625 00
Net risks carried by Company at 31s December, 1883.	1,100,080 00	8,739,700 61	9,839,780 61

MOVEMENT IN RISKS.

——	Number.	Amount.
Mutual System.		$ c.
Policies in force 31st December, 1882	2,723	3,230,569 33
" new and renewed during 1883	797	1,095,917 00
Gross number during 1883	3,520	4,326,486 33
Less expired and cancelled in 1883	1,395	1,592,414 00
Net risks in force on mutual system 31st December, 1883	2,125	2,734,072 33
Cash System.		
Policies in force 31st December, 1882	7,783	6,712,832 21
" new and renewed during 1883	3,645	3,560,579 91
Gross number during 1883	11,428	10,273,412 12
Less expired and cancelled in 1883	3,333	3,033,578 84
Net risks in force on cash system 31st December, 1883	8,095	7,239,833 28

CLASSIFICATION OF RISKS:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	172,519 32	172,519 32
Amount of all premium notes, after deducting all payments thereon and assessments levied	116,196 50	116,196 50
Amount of premium notes received during the year 1883	69,604 22	69,604 22
Residue of premium notes given for reinsurance	1,158 87	1,158 87

RECAPITULATION

OF

ASSETS, LIABILITIES, INCOME AND EXPENDITURE

OF ALL

MIXED MUTUAL AND CASH SYSTEM FIRE INSURANCE COMPANIES.

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

ASSETS FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Value of Real Estate, less Encumbrances.	Mortgages, Bonds, Debentures or other Securities.	Interest Accrued.	Cash at Head Office and Bank Balances.	Agents' Balances.	Due on Assessments, 1883.	Short-date Notes or Due Bills.	Unassessed Premium Notes.	All other Assets.	Total Assets.	Subscribed Stock Capital Uncalled.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Gore District	....	21,000 00	565 35	30,308 43	3,990 02	125 11	....	96,853 08	....	152,841 99	....
Hand-in-Hand	....	35,293 00	2,378 92	3,957 39	1,922 69	....	....	5,915 74	....	49,467 74	80,000 00
Ontario	....	2,016 26	....	2,012 04	2,658 07	647 64	785 68	11,079 69	....	19,199 38	....
Perth County. Farm Branch	....	9,000 00	300 00	325 36	192 51	1,535 15	589 66	20,623 06	15 00	45,280 70	....
Perth County. Town "	....	4,000 00	125 00	3,005 64	379 51	407 10	265 95	4,516 76	....		....
Victoria. General Branch	....	4,277 50	....	45 75	386 90	665 65	107 20	3,670 80	5,522 11	52,685 81	....
Victoria. Hamilton "	....	....	....	117 22	5 61	853 00	327 31	30,107 35	6,599 41		....
Waterloo	4,000 00	35,082 16	1,298 04	1,229 45	1,531 24	1,617 21	4,389 95	115,037 63	500 00	164,685 68	....
Total	4,000 00	110,668 92	4,667 31	41,001 28	11,066 55	5,850 86	6,465 75	287,804 11	12,636 52	484,161 30	....

Note.—The Government Deposits are as follows:—Gore District, $6,520; Hand-in-Hand, $10,000; Ontario, $2,000; Perth County, $2,000; Victoria, $4,000; Waterloo, $14,335.

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

LIABILITIES FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Losses Unpaid at Dec. 31st, 1883, though subsequently discharged.	Borrowed Money.	Unearned Premiums on Cash System, Risks calculated at 50 per cent. of Gross Premiums.	All other Liabilities.	Total Liabilities.	Number of Policies in force.	Amount at Risk.
	$ c.	$ c.	$ c.	$ c.	$ c.		$ c.
Gore District	5,660 00	....	22,411 41	....	28,071 41	6,106	5,877,656 31
Hand-in-Hand	1,226 27	....	5,840 85	1,958 08	9,025 20	1,079	1,999,273 96
Ontario	2,985 93	....	7,515 25	159 20	10,660 38	4,792	3,009,243 09
Perth County. Farm Branch	....	....	2,852 98	....	4,150 72	3,224	3,244,570 00
Perth County. Town "	....	....	1,297 74	....			
Victoria. General Branch	164 50	14,331 03	5,807 98	1,733 38	23,597 01	4,286	3,970,952 00
Victoria. Hamilton "	....	1,286 42	....	273 70			
Waterloo	1,103 00	....	34,390 42	....	35,493 42	10,220	9,973,905 61
Total	11.139 70	15,617 45	80,116 63	4,124 36	110,998 14	....	28,075,600 97

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

INCOME FOR YEAR ENDING 31ST DECEMBER, 1883.

Name of Company.	Received at Head Office from—									Total.
	Cash Borrowed.	First Payments on Premium Notes.	Assessments of 1883.	Assessments due before 1883.	Premiums on Cash System.	Interest.	Membership Fees.	Fees, Licenses, and Extra Premium.	Other Sources.	
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Gore District	....	6,521 60	20,404 21	1,235 20	29,974 72	2,680 20	....	298 28	....	61,114 21
Hand-in-Hand	....	6,964 02	....	....	15,323 50	1,799 04	....	....	....	24,086 56
Ontario	....	947 70	5,576 60	579 96	4,202 89	213 00	1,392 91	119 23	30 00	13,062 29
Perth County. Farm Branch	....	2,245 45	1,645 10	1,098 95	1,785 11	690 25	....	12 50	420 11	9,972 05
Perth County. Town "	....	686 09	216 55	318 35	457 77	387 72	....	60	7 50	
Victoria. General Branch	....	54 98	3,935 06	2,241 23	669 18	547 07	....	9 77	507 86	16,577 20
Victoria. Hamilton "	1,286 42	1,199 90	4,253 76	1,387 02	....	30 77	....	9 20	444 98	
Waterloo	....	13,587 45	20,237 05	1,754 70	39,374 30	1,776 32	....	104 00	696 56	77,530 38
Total	1,286 42	32,207 19	56,268 33	8,615 41	91,787 47	8,124 37	1,392 91	553 58	2,107 01	202,342 69

MIXED MUTUAL AND CASH SYSTEM COMPANIES.

EXPENDITURE FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Repayment of Loans.	Amount paid for Losses.	Commission and Bonus to Agents.	Costs in Law and Equity.	Re-Insurance.	Rebate and returned Premiums.	Interest.	Statutory Assessment and Fees for Licenses and Certificates.	Salaries and General Expense Account.	Dividends and all other Payments.	Total
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Gore District	....	36,198 89	7,795 63	242 97	3,136 23	1,078 69	....	202 54	7,564 58	173 50	56,393 03
Hand-in-hand	....	13,346 06	3,587 87	....	1,586 48	1,535 44	....	111 01	1,385 64	2,000 00	23,552 50
Ontario	....	7,759 59	2,077 48	137 97	....	53 42	43 95	135 59	3,641 04	....	13,849 04
Perth County. { Farm Branch	....	6,840 35	821 14	14 16	14 50	....	....	124 74	2,191 36	229 96	13,278 30
Perth County. { Town "	....	2,339 62	245 47	....	....	6 05	....	....	420 11	30 84	
Victoria { General Branch	1,000 00	3,292 39	120 62	629 25	34 79	....	714 33	161 90	3,290 12	249 23	18,222 27
Victoria { Hamilton "	1,000 00	3,908 10	601 43	22 93	4 68	....	97 05	63 05	1,735 44	1,296 96	
Waterloo	....	53,651 51	7,294 62	528 27	1,045 16	1,429 75	....	350 99	7,469 18	3,897 34	75,666 82
Total	2,000 00	127,336 51	22,544 26	1,575 55	5,821 84	4,103 35	855 33	1,149 82	27,697 47	7,877 83	200,961 96

STRICTLY MUTUAL FIRE INSURANCE COMPANIES.

YEAR ENDING 31ST DECEMBER, 1883.

STRICTLY MUTUAL FIRE INSURANCE COMPANIES,

BAY OF QUINTE AGRICULTURAL MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, PICTON.

Commenced business 31st October, 1874.

President—ARCHELAUS SOUTHARD. — *Secretary*—W. L. PALMER.

Unassessed premium note capital, $10,230.98.

ASSETS.

Actual cash on hand at head office		$758 06
Cash in agents' hands acknowledged by them to be due, and considered good		11 78
Amount unpaid of assessments levied in 1883		154 70
Amount of short date notes, or due bills, one year or more overdue (not extended)	$16 50	
Amount of premium notes in force after deducting all payments thereon and assessments levied		10,230 98
Total assets		$11,155 52

LIABILITIES.

Amount of bills payable and interest	$263 23
" due directors and for salaries	311 25
" due an agent	3 22
" due for rent	30 00
Total liabilities	$607 70

RECEIPTS.

Balance of cash on hand as per last statement, (not extended)	$61 37	
Cash received for first payments, being part payment of premium notes		$319 01
" assessments levied during 1883		612 87
" from loans		250 00
" on agents' balances of 1882		34 52
" for sundries		2 95
Total receipts		$1,219 35

EXPENDITURE.

Expenses of Management:

Amount paid for printing	$50 77
" salaries, directors' and auditors' fees	350 30
" postage and telegrams	9 75
" statutory assessment	28 84
Total expenses of management	$439 66
Cash paid for losses which occurred during 1883	83 00
Total expenditure	$522 66

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Total.
	$ c.
Mutual	630,491 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Total.
		$ c.
Net risks in force 31st December, 1883	534	630,491 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Total.
	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	12,403 93
Amount of all premium notes after deducting all payments thereon and assessments levied	10,230 98

BERTIE AND WILLOUGHBY FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, RIDGEWAY.

Commenced business 6th February, 1880.

President—WALTER E. ELLSWORTH. | *Secretary*—H. N. HIBBARD.

Unassessed premium note capital, $6,727.03.

ASSETS.

Actual cash on hand at head office	$8 94
Amount of premium notes in force, after deducting all payments thereon and assessments levied	6,727 03
Total assets	$6,735 97

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$42 61	
Cash received at taking of application		$322 50
" as first payments, being part payment of premium notes		157 63
Total receipts		$480 13

EXPENDITURE.

Expenses of Management:

Amount paid to agents for commission	$180 25
" " statutory assessment	13 00
" " printing, stationery and advertising	26 50
" " salaries, directors' and auditors' fees	259 50
" " travelling expenses	17 63
" " postages, telegrams, express, etc	9 92
Total expenses of management	$506 80
Cash paid for losses which occurred during 1883	7 00
Total expenditure	$513 80

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	461,635 00	461,635 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	395	402,865 00
" new and renewed during 1883	215	248,225 00
Gross number during 1883	610	651,090 00
Less expired and cancelled in 1883	188	189,455 00
Net risks in force 31st December, 1883	422	461,635 00

CLASSIFICATION OR RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

----	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	7,291 70	7,291 70
Amount of all premium notes, after deducting all payments thereon and assessments levied	6,727 03	6,727 03
Amount of premium notes received during the year 1883	3,940 98	3,940 98

BLANSHARD MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WOODHAM.

Commenced business 27th March, 1876.

President—REUBEN SWITZER. | *Secretary*—WM. JOHNSTON.

Unassessed premium note capital, $14,384.47.

ASSETS.

Actual cash on hand at head office	$390 03
Amount unpaid of assessments levied during 1883	193 14
Amount of premium notes in force, after deducting all payments thereon and assessments levied	14,384 47
Total assets	$14,967 64

LIABILITIES.

None.

RECEIPTS.

Cash at head office, as per last statement (not extended)	$11 58	
" received for assessments levied in 1883		$1,439 64
" borrowed		350 00
Total receipts		$1,789 64

EXPENDITURES.

Expenses of Management :

Amount paid for interest	$38 50
" " statutory assessment	21 21
" " printing	26 00
" " directors' fees	58 00
" " postage	6 98
" " other expenses	10 50
Expenses of management	$161 19
Cash paid for losses which occurred during 1883	650 00
" " loans repaid	600 00
Total expenditure	$1,411 19

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	688,920 00	688,920 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS.

On Policies in force 31st December, 1883.

——	Five years risks.	Total.
	$ c.	$ c.
Amount of all premium notes held by Company, and legally liable to assessment	15,982 74	15,982 74
Amount of all premium notes, after deducting all payments thereon and assessments levied	14,384 47	14,384 47
Amount of premium notes received during the year 1883	4,508 40	4,508 40

NORTH BLENHEIM MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, CHESTERFIELD,

Commenced business 15th August, 1861.

President—John Burns. | *Secretary*—Geo. Middlemas.

Unassessed premium note capital, $29,618.21.

Assets.

Actual cash on hand at head office		$83 21
Amount of premium notes in force after deducting all payments thereon and assessments levied		29,618 21
Total assets		$29,701 42

Liabilities—(None).

Receipts.

Cash at head office, as per last statement (not extended)	$1 52	
Cash received for assessments levied in 1883		$1,362 79
" licenses		37 10
" sundries		44 75
Total receipts		$1,444 64

Expenditure.

Expenses of Management:

Amounts paid for printing, stationery and advertising	$16 50
" travelling expenses	4 50
" salaries, directors' and auditors' fees	92 00
" rent and taxes	6 00
" postage, telegrams and express	9 58
" statutory assessment	18 37
Total expenses of management	$146 95
Amount paid for losses during 1883	1,216 00
Total expenditure	$1,362 95

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	620,295 00	620,295 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	280	569,125 00
" new and renewed during 1883	92	182,600 00
Gross number during 1883	372	751,725 00
Less expired and cancelled in 1883	65	131,430 00
Net risks in force on mutual system 31st December, 1883	307	620,295 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force December 31st, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	31,014 75	31,014 75
Amount of all premium notes, after deducting all payments thereon and assessments levied	29,618 21	29,618 21
Amount of premium notes received during the year 1883	9,130 00	9,130 00

COUNTY OF BRANT FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, PARIS.

Commenced business 27th May, 1861.

President—JOHN MILLER. | *Secretary*—WM. TURNBULL.

Unassessed premium note capital, $61,150.51.

ASSETS.

Actual cash on hand at head office	$1 03
Cash on hand to the Company's credit, not drawn against, in the Bank of British North America	72 99
Amount unpaid of assessments levied during 1883	1,259 65
Amount unpaid of assessments levied in prior years (not extended). $184.68	
" of premium notes in force, after deducting all payments thereon and assessments levied	61,150 51
Total assets	$62,484 18

LIABILITIES.

Amount of losses reported	$237 70
Total liabilities	$237 70

RECEIPTS.

Cash at head office, as per last statement (not extended) $0.44	
Cash received for assessments levied in 1883	$3,315 00
" " " prior to 1883	686 60
Cash borrowed during 1883	1,900 00
Cash receipts from cancelled policies, $41.93; licenses, $18.12	60 05
Total receipts	$5,961 65

Expenditure.

Expenses of Management:

Amount paid for commission	$334 21
" " fuel and light	12 00
" " investigation and adjustment of claims	15 00
" " interest	49 32
" " statutory assessment	72 33
" " printing, stationery and advertising	25 00
" " rent and taxes	50 00
" " salaries, directors' and auditors' fees	515 20
" " postage, telegrams and express	21 07
" " other expenses	12 69
Total expenses of management	$1,106 82

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	$2,865 25	
" " " " before "	16 00	
		2,881 25
Repayment of loans		1,900 00
Total expenditure		$5,888 07

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	2,452,471 00	2,452,471 00

MOVEMENT IN RISKS.

Mutual System.

——	No.	Amount.
		$ c.
Policies in force 31st December, 1882	1,830	2,240,605 00
New and renewed during 1883	350	400,411 00
Gross number during 1883	2,180	2,641,016 00
Less expired and cancelled in 1883	182	188,545 00
Net risks in force 31st December, 1883	1,998	2,452,471 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessments	74,194 14	74,194 14
Amount of all premium notes, after deducting all payments thereon and assessments levied	61,150 51	61,150 51
Amount of premium notes received during the year 1883	12,189 00	12,189 00

CANADIAN MILLERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, HAMILTON.

Commenced business 20th September, 1878.

President—DAVID GOLDIE. | *Secretary*—SENECA JONES.

Unassessed premium note capital, $9,428.70.

ASSETS.

Actual cash on hand at head office	$103 24
Cash on deposit to the Company's credit, not drawn against, in Bank of Hamilton, at Hamilton	2,828 10
Amount unpaid of assessments levied during 1883	93 75
" " " " prior to 1883..(not extended) $27.75	
" of premium notes in force, after deducting all payments thereon and assessments levied	9,428 70
Total assets	$12,453 79

LIABILITIES.

Amount of losses reported	$1,958 33

RECEIPTS.

Cash at head office and in bank, as per last statement (not extended) $2,328.49	
" received as first payments, being part payment of premium notes	$607 65
" " for assessments levied during 1883	1,452 51
" " " " prior to 1883	52 50
" " for interest during 1883	81 41
Carpenters' risks, etc.	6 00
Total receipts	$2,200 07

EXPENDITURE.

Expenses of Management:	
Amount paid for commission to Secretary-Treasurer	$161 64
" " statutory assessment	3 85
" " printing, stationery and advertising	21 10
" " salaries, directors' and auditors' fees	288 66
" " travelling expenses	8 40
" " postage, telegrams and express	26 45
" " law costs	12 00
" " other expenses	73 25
Total expenses of management carried out	$595 35
Miscellaneous payments:	
Amount paid for losses which occurred during 1883	1,000 00
" " rebate	1 87
Total expenditure	$1,597

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	128,000 00	128,000 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	73	119,300 00
" new and renewed during 1883	24	40,200 00
Gross number during 1883	97	159,500 00
Less expired and cancelled in 1883	22	31,500 00
Net risks in force 31st December, 1883	75	128,000 00

CLASSIFICATION OF RISKS.

The Company's business is exclusively confined to flouring mills, and their stocks and machinery.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessment	13,773 40	13,773 40
Amount of all premium notes, after deducting all payments thereon and assessments levied	9,428 70	9,428 70
Amount of premium notes received during the year 1883	4,091 00	4,091 00

CULROSS MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, TEESWATER.

Commenced business June 3rd, 1872.

President—Thomas Allison. | *Secretary*—Wm. Colvin.

Unassessed premium note capital, $7,220.12.

Assets.

Actual cash on hand at head office	$6 73
Amount unpaid of assessments levied during 1883	67 26
Amount of premium notes in force, after deducting all payments thereon and assessments levied	7,220 12
Total assets	$7,294 11

Liabilities—(None).

Receipts

Cash at head office, as per last statement (not extended)	$6 03	
" received from membership fees		$220 50
" " for fees (not being part payment of premium notes) on renewals and new risks		737 74
Total receipts		$958 24

Expenditure.

Expenses of Management:

Amount paid for salaries, directors' and auditor's fees	$72 50
" " statutory assessment or certificate	13 89
" " commission to agents and fees	164 00
" " investigation of claims	2 00
" " printing, stationery and advertising	17 00
" " travelling expenses	8 00
" " fuel and light	1 00
" " postage and telegrams	2 15
" " other expenses	10 00
Expenses of management	$290 54
Amount paid for losses which occurred during 1883	667 00
Total expenditure	$957 54

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	401,256 00	401,256 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	310	350,487 00
" new and renewed during 1883	147	198,805 00
Gross number during 1883	457	549,292 00
Less expired and cancelled in 1883	130	148,036 00
Net risks in force on mutual system on 31st December, 1883	327	401,256 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in Force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	8,025 12	8,025 12
Amount of all premium notes, after deducting all payments thereon and assessments levied	7,220 12	7,220 12
Amount of premium notes received during the year 1883	2,960 72	2,960 72

DOMINION GRANGE MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, OWEN SOUND.

President—Shem Parsons. | *Secretary*—Richard J. Doyle.

Unassessed premium note capital, $22,308.61.

GENERAL BRANCH.

Commenced business 1st March, 1881.

Assets.

Actual cash on hand at head office	$312 05	
Cash on deposit to the Company's credit, not drawn against, in Merchants' Bank; agency at Owen Sound	1,043 62	
		$1,355 67
Amount unpaid of short date notes or due bills less than one year overdue		1,032 27
" " premium notes in force, after deducting all payments thereon and assessments levied	$22,308 61	
Less premium notes given for reinsurance	25 69	
		22,282 92
All other assets		24 15
Total assets		$24,695 01

Liabilities—(None).

Receipts.

Cash at head office, as per last statement (not extended)..$0 57		
Balance in Merchants' Bank (not extended) $1,128 68		
Cash received at taking of application	$1,202 89	
Cash received as first payments or deposits, being part payment of premium notes	1,340 57	
		$2,543 46
Cash received for interest during 1883		89
Cash receipts from fees, licenses, etc		65 02
Total receipts		$2,609 37

Expenditure.

Expenses of Management:

Amount paid for commission to agents	$
" " investigation and adjustment of claims	55 92
" " fuel and light	14 29
" " printing, stationery and advertising	76 80
" " statutory assessment	25 82
" " salaries, directors' and auditors' fees	660 72
" " postage, telegrams and express	41 38
" " rent and taxes	11 25
" " allowance to agents for postage and stationery	67 00
Total expenses of management	$953 18

Miscellaneous Payments :

Cash paid for losses which occurred during 1883	1,359 46
" " reinsurances	20 96
" " rebate, abatement and returned premiums	45 35
" " refunds	4 00
Total expenditure	$2,382 95

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Total.
	$ c.	$ c.	$ c.	$ c.
Mutual	3,000 00	3,100 00	1,147,863 00	1,153,963 00
" reinsured			4,600 00	4,600 00
Net risks actually carried by Company at Dec. 31st, 1883	3,000 00	3.100 00	1,143,263 00	1,149,363 00

CLASSIFICATION OF RISKS:

Non-hazardous.

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force, 31st Dec., 1882	817	786,957 00
Policies, new and renewed during 1883	392	392,971 00
Gross number during 1883	1,209	1,179,928 00
Less expired and cancelled in 1883	25	25,965 00
Net risks in force on mutual system 31st Dec., 1883	1,184	1,153,963 00

PREMIUM NOTES OR UNDERTAKINGS

On policies in force 31st December, 1882.

——	One year risks.	Two year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessment.	81 00	78 00	30,704 72	30,863 72
Amount of all premium notes, after deducting all payments thereon and assessments levied	70 00	61 70	22,176 91	22,308 61
Amount of premium notes received during the year 1883	32 40	54 00	10,156 70	10,243 10

DOMINION GRANGE MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, OWEN SOUND.

President—SHEM PARSONS. | *Secretary*—RICHARD J. DOYLE.

GRANGE BRANCH.

Commenced business March 29th, 1877.

Unassessed premium note capital, $108,621.08.

ASSETS.

Cash value of mortgages	$9,640 00	
" shares, bonds, debentures, securities, other than foregoing	1,100 00	
		$10,740 00
Actual cash on hand at head office		169 28
Cash on deposit to the Company's credit, not drawn against, in the following chartered banks:—		
Molson's Bank, agency at Owen Sound		6,686 92
Amount of short date dotes or due bills less than one year overdue		2,670 13
Amount of short date notes or due bills one year or more overdue (not extended)	$144 39	
Amount of premium notes in force after deducting all payments thereon and assessments levied	$108,621 08	
Less residue of premium notes given by Company for re-insurance	55 21	
		108,565 87
Amount of accrued interest		428 73
Miscellaneous		139 92
Total assets		$129,400 85

LIABILITIES.

Amount of loss adjusted	$20 11
" outstanding account	43 04
Total liabilities	$63 15

RECEIPTS.

Cash at head office, as per last statement (not extended)	$216 00	
Bank Balances (not extended)	9,554 95	
Cash received as first payments or deposits, being part payment of premium notes		$10,579 01
Cash received for interest		591 24
" " licenses		451 47
" " miscellaneous		5 50
Total receipts		$11,627 22

EXPENDITURE.

Expenses of Management :

Amount paid for inspection of agencies	$26 35
" investigation and adjustment of claims	173 30
" interest and bank discount	7 14
" statutory assessment	171 45
" printing, stationery and advertising	571 13
" rent and taxes	51 26
" salaries, directors' and auditors' fees	2,561 88
" travelling expenses	16 00
" postage, telegrams and express, etc., etc	442 95
" office furniture	24 78
" petty expenses	110 73
Total expenses of management	$4,156 97

Miscellaneous Payments :

Cash paid for losses which occurred during 1883	4,068 55
" " " " prior to 1883	334 63
" reinsurances	79 31
" rebate, abatement and returned premiums	299 73
" refund to members	1,094 79
Expenditure other than any of the foregoing	17 99
Total expenditure	$10,051 97

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	One year or less.	Two years.	Three years.	Four years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	4,881 00	4,900 00	10,175 00	5,681,509 00	5,701,465 00
" reinsured	....	....	....	....	19,400 00
Net risks actually carried by Company at 31st Dec., 1883	....	....	....	....	5,682,065 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	4,198	5,323,893 00
" new and renewed during 1883	1,169	1,518,231 00
Gross number during 1883	5,367	6,842,124 00
Less expired and cancelled in 1883	968	1,140,659 00
Net risks in force on mutual system 31st December, 1883	4,399	5,701,465 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force December 31st, 1883.

——	One year risks.	Two year risks.	Three year risks.	Four year risks.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	123 79	128 58	276 13	149,878 58	150,407 08
Amount of all premium notes, after deducting all payments thereon and assessments levied	104 31	102 38	200 62	108,213 77	108,621 08
Amount of premium notes received during the year 1883	123 79	113 73	146 88	39,110 99	39,495 39

NORTH AND SOUTH DORCHESTER MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, HARRIETSVILLE.

Commenced business 8th January, 1869.

President—WILLIAM WOODS. | *Secretary*—CINNAMON BARR.

Unassessed premium note capital, $7,644.11.

ASSETS.

Cash on hand at head office	$47 08	
Cash on deposit to the Company's Credit, not drawn against, in the Agricultural Savings and Loan Company, London	2,562 22	
		$2,609 30
Amount unpaid of assessments levied during 1883		160 54
" " " prior to 1883 (not extended)	53 90	
" of premium notes in force, after deducting all payments thereon and assessments levied		7,644 11
Total assets		$10,413 95

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$1,633 51	
Cash received at taking of application, as first payments		$347 27
" for assessments levied in 1883		$1,126 82
" " years prior to 1883		11 00
" for interest during 1883		140 65
Total receipts		$1,625 74

EXPENDITURE.

Expenses of Management:

Amount paid for investigation and adjustment of claims	$14 00
" " statutory assessment or certificate	23 65
" " printing, stationery and advertising	7 30
" " rent and taxes	2 00
" " salaries, directors' and auditors' fees	155 00
Total expenses of management	$201 95

Miscellaneous payments:

Cash paid for losses which occurred during 1883	448 00
Total expenditure	$649 95

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	764,411 00	764,411 00

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	554	732,760 00
" new and renewed during 1883	158	293,216 00
Gross number during 1883	712	1,025,976 00
Less expired or cancelled in 1883	132	261,565 00
Net risks in force on mutual system 31st December, 1883	580	764,411 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	7,644 11	7,644 11
Amount of all premium notes, after deducting all payments thereon and assessment levied	7,644 11	7,644 11
Amount of premium notes received during the year 1883	753 85	753 85

NORTH DUMFRIES AND SOUTH WATERLOO FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, AYR.

Commenced business 15th May, 1856.

President--James Deans. | *Secretary*--Thos. Marshall.

Unassessed premium note capital, $155,168.23.

Assets.

Amount unpaid of assessments levied during 1883		$744 69
" of assessments levied before 1883, not extended	$234 41	
" of premium notes in force, after deducting all payments thereon and assessments levied		155,168 23
Total assets		$155.912 92

Liabilities.

Amount of losses adjusted	$23 00
" due Treasurer	954 76
Total liabilities	$977 76

Receipts.

Cash received for assessments levied in 1883	$4,968 10
" received in years prior to 1883	516 20
" advanced by Treasurer	954 76
" money borrowed	2,000 00
Total receipts	$8,439 06

Expenditure.

Expenses of Management:	
Amount paid for interest	$140 00
" " statutory assessment or certificate	106 29
" " printing, stationery and advertising	56 36
" " rent and taxes	61 50
" " salaries, directors' and auditor's fees	1,019 80
" " postage, telegrams and express	43 17
Total expenses of management	$1,427 12
Miscellaneous Payments:	
Cash paid for losses that occurred during 1883	1,963 15
" " " " before 1883	2,000 00
" Treasurer, for amount due him 31st December, 1881	1,048 79
" for repayment of loan	2,000 00
Total expenditure	$8,439 06

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	3,426,175 00	3,426,175 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,475	3,292,440 00
Policies new and renewed during 1883	359	848,115 00
Gross number during 1883	1,834	4,140,555 00
Less expired and cancelled in 1883	308	714,380 00
Net risks in force on mutual system 31st December, 1883	1,526	3,426,175 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in Force 31st December, 1882.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	171,308 75	171,308 75
Amount of all premium notes, after deducting all payments thereon and assessments levied	155,168 23	155.168 23
Amount of premium notes received during the year 1883	42,405 75	42,405 75

DUNWICH FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WALLACETOWN.

Commenced business September, 1880.

President—JOHN PEARCE. | *Secretary*—JOHN L. PEARCE.

Unassessed premium note capital, $9,831.81.

ASSETS.

Amount of cash at head office		$53 13
Amount unpaid of assessments levied during 1883		4 50
" " prior to 1882 (not extended)	$5 10	
Amount of unassessed premium note capital		9,831 81
Total		$9,889 44

LIABILITIES.

Amount of losses unadjusted	$610 00
Total liabilities	$610 00

INCOME.

Cash at head office, as per last statement (not extended)	$48 73	
Amount of cash received for fees and surveys		$ 64 50
" " for assessments levied in 1883		896 36
" " " " prior to 1883		21 83
Total income		$982 69

EXPENDITURES.

Expenses of Management :	
Amount paid for fees to agents	$33 50
" legal advice	2 00
" statutory assessment	14 60
" printing, stationery, advertising and postage	17 34
" salaries, directors' and auditors' fees	101 25
" other expenses	9 60
Total expenses	178 29
Cash paid for losses which occurred prior to 1883	800 00
Total expenditure	$978 29

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	494,455 00	494,455 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	439	452,270 00
" new and renewed during 1883	50	47,855 00
Gross number during 1883	489	500,125 00
Less expired and cancelled in 1883	4	5,670 00
Net risks in force on mutual system 31st December, 1883	485	494,455 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	12,347 86	12,347 86
Amount of all premium notes, after deducting all payments thereon and assessments levied	9,831 81	9,831 81
Amount of premium notes received during the year 1883	1,190 37	1,190 37

SOUTH EASTHOPE FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, TAVISTOCK.

Commenced business 28th December, 1871.

President—Werner Youngblut. | *Secretary*—Samuel Zurbrigg.

Unassessed premium note capital, $56,408.62.

Assets.

Actual cash on hand at head office		$215 59
Amount of premium notes in force, after deducting all payments thereon and assessments levied		56,408 62
Total assets		$56,624 21

Liabilities—(None).

Receipts.

Cash at head office, as at last statement (not extended)	$47 41	
Cash received at taking of applications		$256 00
" by Company for assessments levied in 1883		1,955 70
Total receipts		$2,211 70

Expenditure.

Expenses of Management:

Amount paid for salaries, directors' and auditors' fees	$15 50
" commission and fees	204 11
" statutory assessment	35 19
" interest	9 10
" printing, stationery and advertising	20 00
" postage, telegrams and express	15 20
" assessing and collecting assessment of 1883	25 00
Expenses of management	$324 10

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	1,717 67
" other expenses	1 75
Total expenditure	$2,043 52

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	1,192,340 00	1,192,340 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	684	1,089,966 00
" new and renewed during 1883	183	286,310 00
Gross number during 1883	867	1,376,276 00
Less expired and cancelled in 1883	126	183,936 00
Net risks in force on mutual system 31st December, 1883	741	1,192,340 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force December 31st, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by the Company, and legally liable to assessment	59,617 00	59,617 00
Amount of all premium notes, after deducting all payments thereon and assessments levied	56,408 62	56,408 62
Amount of premium notes received during the year 1883	14,315 50	14,315 50

ECONOMICAL MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, BERLIN.

Commenced business 28th October, 1871.

President—HUGO KRANZ, M.P. | *Secretary*—WM. OELSCHLAGER.

Unassessed premium note capital, $71,680.00.

ASSETS.

Cash on hand at head office		$70 40
Cash on deposit to Company's credit in Canadian Bank of Commerce		16,005 42
Cash in agents' hands acknowledged by them to be due, and considered good		30 29
Amount unpaid of assessments levied during 1883		5,064 66
" " " in prior years (not extended), $198.50		
Amount of short date notes, or due bills, less than one year overdue		160 07
" premium notes in force after deducting all payments thereon and assessments levied	$71,680 00	
Less premium notes given for reinsurance	393 30	
		71,286 70
Amount of interest due and accrued		225 80
Total assets		$92,843 34

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended) $11,544.22	
Cash received as first payments, being part payment of premium notes	$3,348 78
" for assessments levied in 1883	3,345 85
" for assessments levied in years prior to 1883	4,016 19
" for interest during 1883	812 80
" for transfer fees	63 50
Total receipts	$11,587 12

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents	$236 43
" " investigation and adjustment of claims	169 86
" " statutory assessment	46 93
" " printing, stationery, and advertising	164 11
" " salaries, directors' and auditor's fees	1,542 10
" " postage, telegrams and express	195 17
" " fuel and light	14 96
" " rent and taxes	49 00
" " other expenses	84 85
Expenses of management	$2,503 41

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	4,506 17
" " reinsurances	24 75
" " rebate, abatement, and returned premiums	21 19
Total expenditure	$7,055 52

CURRENCY OF RISKS.

Amount covered by policies in force, 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	1,729,856 00	1,729,856 00
Reinsured	8,150 00	8,150 00
Net risks actually carried by Company	......	1,721,706 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,769	1,453,806 00
" new and renewed during 1883	834	790,200 00
Gross number during 1883	2,603	2,244,006 00
Less expired and cancelled in 1883	628	514,150 00
Net risks in force on mutual system 31st December, 1883	1,975	$1,729,856 00

BUSINESS TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS.

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	87,597 00	87,597 00
Amount of all premium notes, after deducting all payments thereon and assessments levied	71,680 00	71,680 00
Amount of premium notes received during the year 1883	42,204 00	42,204 00
Residue of premium notes given for reinsurance	393 30	393 30

ERAMOSA MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ROCKWOOD.

Commenced business 9th April, 1861.

President—LAZARUS PARKINSON. | *Secretary*—HUGH BLACK.

Unassessed premium note capital, $10,462.15.

ASSETS.

Actual cash in hand at head office	$216 65
Cash on deposit to the Company's credit, not drawn against, in the Canadian Bank of Commerce, Guelph	1,940 26
Amount unpaid of assessments levied during 1883	71 39
" of premium notes in force, after deducting all payments thereon and assessments levied	10,462 15
Total assets	$12,690 45

LIABILITIES—(None).

RECEIPTS.

Cash on hand as per last statement (not extended)	$1,828.99	
Cash received at first payments, being part payment of premium notes		$103 43
" for assessments levied in 1883		140 29
" " " years prior to 1883		57 01
" for interest		73 15
Total receipts		$373 88

EXPENDITURE.

Expenses of Management :

Amount paid for statutory assessment	$7 44
" " printing	8 00
" " salaries	25 00
" " postage, etc	5 52
Total expenditure	$45 96

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	Three years.	Tota
	$ c.	$ c.
Mutual	257,910 00	257,910 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	159	234.510 00
" new and renewed during 1883	65	90,950 00
Gross number during 1883	224	325,460 00
Less expired and cancelled in 1883	55	67,550 00
Net risks in force on mutual system 31st December, 1883	169	257,910 00

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force, 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	10,777 26	10,777 26
Amount of all premium notes, after deducting all payments thereon and assessments levied	10,462 15	10,462 15
Amount of premium notes received during the year 1883	4,122 00	4,122 00

ERIE FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, SELKIRK.

Commenced business, 2nd September, 1871.

President—Wm. Holmes. | *Secretary*—J. W. Holmes.

Unassessed premium note capital, $11,817.76.

Assets.

Actual cash on hand at head office		$145 66
" in agents' hands		22 55
Amount unpaid of assessments levied during 1883		122 80
" " prior to 1883 (not extended	$25 52	
" " short date notes, or due bills, less than one year overdue		172 97
" " premium notes in force, after deducting all payments thereon and assessments levied		11,817 76
Total assets		$12,281 74

Liabilities—(None).

Receipts.

Cash as per last statement (not extended)	$222 29	
Cash at taking of applications		$157 50
Cash received as first payments, being part payment of premium notes at head office		113 19
" for assessments levied in 1883		548 55
" " " years prior to 1883		4 95
" for due bills		18 26
" permits		20 00
Total receipts		$862 45

Expenditure.

Expenses of Management:	
Amount paid for commission and fees	$168 50
" " for fuel and light	2 00
" " statutory assessment	17 17
" " printing, stationery and advertising	44 50
" " salaries, directors' and auditors's fees	56 20
" " postage, telegrams and express	7 86
" " travelling expenses	2 65
" " refunds	8 05
Total expenses of management	306 93
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	632 15
Total expenditure	$939 08

CURRENCY OF RISKS.

Amount covered by Policies in force, 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	555,035 00	555,035 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	500	531,770 00
" new and renewed during 1883	115	132,475 00
Gross number during 1883	615	664,245 00
Less expired and cancelled in 1883	95	109,210 00
Net risks in force 31st December, 1883	520	555,035 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessment	13,738 43	13,738 43
Amount of all premium notes. after deducting all payments thereon and assessments levied	11,817 76	11,817 76
Amount of premium notes received during the year 1883	3,287 40	3,287 40

FORMOSA MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, FORMOSA.

Commenced business 22nd May, 1880.

President—ANDREW WAECHTER. | *Secretary*—JULIUS NOLL.

Unassessed premium note capital. $7,967.76.

ASSETS.

Actual cash on hand at head office	$114 07
Amount of unpaid assessments which were levied during 1883	20 32
" short date notes or due bills, less than one year overdue	729 74
" premium notes in force, after deducting all payments thereon and assessments levied	7,967 76
Total assets	$8,831 89

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended) $284 41	
Cash received as first payments being part payment of premium notes	$112 56
" for assessments levied in 1883	295 12
" " " " before 1883	2 40
" " interest	32 38
Cash receipts from Agents, balances of 1882	10 42
Total receipts	$452 88

EXPENDITURE.

Expenses of Management :

Amount paid for printing and stationery	$33 25
" for statutory assessment or certificate	9 51
" salaries, directors' and auditors' fees	34 30
" postage, telegrams and express	5 75
" investigation of claims	1 00
Total expenses of management	$83 81
Cash paid for losses which occurred during 1883	5 00
Total expenditure	88 81

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	266,362 00	266,362 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	273	294,612 00
" new and renewed during 1883	72	89,280 00
Gross number during 1883	345	383,892 00
Less expired and cancelled in 1833	103	117,530 00
Net risks in force 31st December, 1883	242	266,362 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES AND UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Two year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	21 00	6 00	8,582 00	8,609 00
Amount of all premium notes, after deducting all payments thereon and assessments levied	......	......	....	7,967 76
Amount of premium notes received during the year 1883	21 00	6 00	2,760 00	2,787 00

GERMANIA FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, NEAR NEUSTADT.

Commenced business 16th March, 1878.

President—Jno. Roedding. | *Secretary*—Geo. Hopf.

Unassessed premium note capital, $14,142.19.

Assets.

Actual cash on hand at head office	$3 20
Amount unpaid of assessments levied before 1882	
" " " (not extended)..$15 25	
Amount of premium notes in force after deducting all payments thereon and assessments levied	14,142 19
Amount due on membership fees	7 00
Total assets	$14,152 39

Liabilities—(None).

Receipts.

Cash at head office as per last statement (not extended).... $102 70	
Cash received for membership fees (not being part payment of premium notes)	$24 00
Cash received for assessments levied in years prior to 1883	40 25
Total receipts	$64 25

Expenditure.

Expenses of Management:

Amount paid for investigation of claims	$3 00
" " statutory assessment or certificate	18 35
" " printing, stationery and advertising	1 10
" " rent and taxes	4 00
" " salaries, directors' and auditors' fees	54 00
" " travelling expenses	21 00
" " postage, telegrams and express	3 55
Expenses of management	$105 00

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	58 75
Total expenditure	$163 75

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.
Mutual	1,700 00	9,300 00	598,715 00	609,715 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	500	568,575 00
" new and renewed during 1883	143	214,240 00
Gross number during 1883	643	782,815 00
Less expired and cancelled in 1883	142	173,500 00
Net risks in force on mutual system 31st December, 1883	501	609,315 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in Force 31st December, 1882.

——	Three year risks.	Four year risks.	Five year risks.	Total.
	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	28 50	200 50	15,471 50	15,700 50
Amount of all premium notes after deducting all payments thereon and assessments levied	22 35	159 40	13,960 44	14,142 19
Amount of premium notes received during the year 1883	....	....	....	5,302 50

THE GLOBE MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, BRANTFORD.

Commenced business 5th November, 1873.

President—JOHN STRICKLAND. | *Secretary*—EDWIN SIMS.

Unassessed premium note capital, $10,819.92.

ASSETS.

Actual cash on hand at head office	$273 69	
Cash on deposit to the Company's credit, not drawn against, in Canadian Bank of Commerce, agency at Brantford	1,007 59	
Royal Loan and Savings Company, Brantford	1,609 95	
		$2,891 23
Cash in agents' hands, acknowledged by them to be due, and considered good		33 13
Amount of unpaid assessments levied during 1883		597 97
" " " " before 1883, not extended...$492 76		
" premium notes in force, after deducting all payments thereon and assessments levied		10,819 92
" of interest		85 22
Total assets		$14,427 47

LIABILITIES.

Amount of adjusted loss	$1,400 00
Amount due directors	126 40
Total liabilities	$1,526 40

RECEIPTS.

Cash at head office, as per last statement, not extended...$117 24	
Cash received as first payments, being part payment of premium notes	$952 23
" for assessments levied in 1883	1,425 53
" " " years prior to 1883	75 04
" for carpenters' risks, etc	3 20
" for transfer fees	8 50
" from bills receivable	180 00
Total receipts	$2,644 50

Expenditure.

Expenses of Management:

Amount paid for commission to agents	$456 12
" statutory assessment or certificate	19 67
" printing, stationery and advertising	60 25
" salaries, directors' and auditors' fees	495 55
" travelling expenses	11 95
" postage, telegrams and express	48 49
" investigation and adjustments of claims	
" other expenses	11 90
Expenses of management	1,103 93

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	830 93
" rebate, etc.	22 50
" reinsurances	71 90
Total expenditure	$2,029 26

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Three years.	Total.
	$ c.	$ c.	$ c.
Mutual	1,700 00	714,274 00	715,974 00
Reinsured on cash system			

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Total.
		$ c.
Policies in force 31st December, 1882	903	609,271 00
New and renewed during 1883	356	227,178 00
Gross number during 1883	1,259	836,449 00
Less expired and cancelled in 1883	181	120,475 00
Net risks in force 31st December, 1883	1,078	715,974 00

BUSINESS TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	142 59	14,953 97	15,096 56
Amount of all premium notes, after deducting all payments theron and amounts levied	73 00	10,746 92	10,819 92
Amount of premium notes received during the year 1883	75 50	4,929 70	5,005 20

THE GRAND RIVER FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, YORK.

Commenced business 15th April, 1875.

President—Henry E. Harrison. | *Secretary*—F. A. Nelles.

Unassessed premium note capital, $5,557.77.

Assets.

Actual cash on hand at head office		$37 49
Cash on deposit to the Company's credit, not drawn against, in Montreal Bank agency at Hamilton		750 00
Cash in agents' hands, acknowledged by them to be due, and considered good		21 50
Amount unpaid of assessments levied in years prior to 1883 (not extended)	$18 87	
Amount of premium notes in force after deducting all payments thereon and assessments levied		5,557 77
Amount of unpaid licenses		3 00
Total assets		$6,369 76

Liabilities.

Amount of loss reported	$720 00
Total liabilities	$720 00

Receipts.

Cash at head office, as per last statement (not extended)	$731 94	
Cash received at taking of applications		$59 50
" for assessments levied in years prior to 1883		164 79
" sale of licenses		5 00
" interest		22 95
Total receipts		$252 24

Expenditure.

Expenses of Management:	
Amount paid for law costs	$2 25
" statutory assessment	12 79
" printing and advertising	5 50
" salaries, directors' and auditors' fees	143 50
" travelling expenses	3 00
" postage, telegrams and express	7 50
Total expenses of management	174 54
Miscellaneous payments:	
Cash paid for losses which occurred during 1883	19 15
" assessments refunded	3 00
Total expenditure	$196 69

CURRENCY OF RISKS.

Amount covered by Policies in force, 31st December, 1883.

System.	Three years.	Five years.	Total
	$ c.	$ c.	$ c.
Mutual	379,400 00	9,675 00	389,075 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	311	396,087 00
" new and renewed during 1883	146	209,035 00
Gross number during 1883	457	605,122 00
Less expired and cancelled in 1883	153	316,047 00
Net risks in force on mutual system 31st December, 1883	304	389,075 00

CLASSIFICATION OF RISKS:

All Non-Hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Five year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	5,780 33	254 37	6,034 70
Amount of all premium notes, after deducting all payments thereon and assessments levied	5,377 17	180 60	5,557 77
Amount of premium notes received during the year 1883	3,176 76	....	3,176 76

GREY AND BRUCE MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, HANOVER.

Commenced business 6th July, 1878.

President—DAVID MCNICOL. | *Secretary*—JONATHAN O'NEILL.

Unassessed premium note capital, $11,070.86

ASSETS.

Cash on hand at the head office	$49 31	
" deposit to the Company's credit, not drawn against, in the Merchants' Bank agency at Walkerton	1,684 34	
		$1,733 65
Amount unpaid of assessments levied during 1883		59 80
Amount of premium notes in force after deducting all payments thereon and assessments levied		11,070 86
Total assets		$12.864 31

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$954 34	
" received as first payments, being part payment of premium notes		$137 31
" " for assessments levied in 1883		877 71
" " " " years prior to 1883		9 97
Total receipts		$1.024 99

EXPENDITURE.

Expenses of Management:

Amount paid for investigation of claims	$6 00
" " printing, stationery, advertising and postage	36 71
" " salaries, directors' and auditors' fees	146 00
" " statutory assessment	20 26
Expenses for management	$208 97

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	80 50
Cash paid for rebate	1 50
Total expenditure	$290 97

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year.	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	900 00	4,860 00	326,320 00	12,835 00	288,175 00	633,090 00

MOVEMENT OF RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	604	$627,458 00
" new and renewed during 1883	217	244,695 00
Gross number during 1883	821	872,153 00
Less expired and cancelled in 1883	230	239,063 00
Net risks in force 31st December, 1883	591	633,090 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1882.

——	One year risks.	Two years risks.	Three years risks.	Four years risks.	Five years risks.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	4 70	59 90	4,971 69	234 80	7,123 40	12,394 09
Amount of all premium notes, after deducting all payments thereon and assessments levied	4 70	56 90	4,169 95	197 91	6,641 40	11,070 86
Amount of premium notes received during the year 1883	4 70	54 90	1,767 99	130 80	3,105 55	5,063 94

GUELPH TOWNSHIP MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, GUELPH TOWNSHIP, LOT 6, CON. 1, DIV. B.

Commenced business 16th February, 1860.

President—JOHN HOBSON. | *Secretary*—WM. WHITELAW.

Unassessed premium note capital, $16,841.52.

ASSETS.

Actual cash on hand at head office	$340 65
Amount unpaid of assessments levied in 1883	141 80
Amount of premium notes in force after deducting all payments thereon and assessments levied	16,841 52
Total assets	$17,323 97

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$707.35	
Cash received as first payments, being part payment of premium notes		$305 40
" for assessments levied in 1883		800 00
" " interest		21 58
Total receipts		$1,126 98

EXPENDITURE.

Expenses of Management:

Amount paid for statutory assessment or certificate	11 93
" " printing, stationery and advertising	21 75
" " salaries, directors' and auditors' fees	49 00
" " postage, telegrams and express	6 00
" " investigation of claims	5 00
Total expenses of management	93 68

Miscellaneous Payments:

Cash paid for losses during 1883	1,400 00
	$1,493 68

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	c.
Mutual	409,515 00	409,515 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	214	369,565 00
" new and renewed during 1883	86	164,850 00
Gross number and amount during 1883	300	534,415 00
Less expired and cancelled in 1883	73	124,900 00
Net risks in force 31st December, 1883	227	409,515 00

CLASSIFICATION OF RISKS:

Farm and non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	18,763 50	18,763 50
Amouut of all premium notes, after deducting all payments thereon and assessment levied	16,841 52	16,841 52
Amount of premium notes received during the year 1883	7,860 00	7,860 00

HAY TOWNSHIP FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ZURICH.

Commenced business 3rd February, 1875.

President—THOS. YEARLEY. | *Secretary*—HENRY EILBER.

Unassessed premium note capital, $35,309.92.

ASSETS.

Actual cash on hand at head office	$171 65
Amount of premium notes in force, after deducting all payments thereon and assessments levied	$35,309 92
Total assets	$35,481 57

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended) $177.87	
Cash received as first payments, being part payment of premium notes	$175 90
" for interest	29 35
" salvage	3 00
Total receipts	$208 25

EXPENDITURE.

Expenses of Management:

Amount paid for statutory assessment or certificate	$42 31
" printing, stationery and advertising	48 75
" salaries, directors' and auditors' fees	118 50
" travelling expenses	5 00
" postage, telegrams and express	27 25
" investigation and adjustment of claims	12 00
" other expenses	65 00
Expenses of management	$318 81

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	695 66
Total expenditure	$1,014 47

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December 1883.

System.	Five Years.	Total.
	$ c.	$ c.
Mutual System	1,437,602 00	1,437,602 00

MOVEMENT OF RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,103	1,310,727 00
" new and renewed during 1883	285	345,130 00
Gross number during 1883	1,388	1,655,857 00
Less expired and cancelled in 1883	198	218,255 00
Net risks in force on mutual system 31st December, 1883	1,190	1,437,602 00

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of all premium notes, after deducting all payments thereon and assessments levied	35,309 92	35,309 92
Amount of premium notes renewed during the year 1883	9,693 90	9,693 90

HOPEWELL CREEK MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, NEW GERMANY.

Commenced business 3rd March, 1880.

President—Edward Halter. | *Secretary*—Jacob H. Leyes.

Unassessed premium note capital, $36,575.76.

Assets.

Actual cash in hand at head office		$117 76
Amount unpaid of assessments levied in 1883		211 69
Amount of short date notes or due bills less than one year overdue		2 00
" premium notes in force, after deducting all payments thereon and assessments levied	$36,575 76	
Less premium notes given for reinsurance	24 35	
		36,551 41
Total assets		$36,882 86

Liabilities.

Amount of unpaid loans	$209 35
Total liabilities	$209 35

Receipts.

Cash at head office, as per last statement (not extended)	$43 00	
Cash received as first payments, being part payment of premium notes		$117 67
" for interest during 1883		1 95
" from all assessments levied in 1883		1,201 22
" " transfer fees		2 00
" " salvage		2 00
" " agents on account		26 73
" " balance from late treasurer		4 69
" " bills receivable		2 58
" " loans		600 00
Total receipts		$1,958 84

Expenditure.

Expenses of Management:

Amount paid for investigations and adjustment of claims	$10 50
" stationery	5 45
" printing	29 50
" salaries, directors' and auditors' fees	154 50
" statutory assessment	15 43
" bank commission	
" postage	27 25
" commission	75
" interest	31 67
Expenses of management	$275 05

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	589 20
" losses which occurred during 1882	593 00
" reinsurances	8 45
" repayment of loan	400 00
" refunds	3 38
" office furniture	15 00
	$1,884 08

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	665,944 00	665,944 00
Reinsured on mutual system	2,600 00	2,600 00
Net risks actually carried by Company	....	663,340 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	518	478,004 00
" new and renewed during 1883	197	210,014 00
Gross number during 1883	715	688,018 00
Less expired and cancelled in 1883	43	22,074 00
Net risks in force on mutual system 31st December, 1883	672	665,944 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	39,374 27	39,374 27
Amount of all premium notes, after deducting all payments thereon and assessments levied	36,575 76	36,575 76
Amount of premium notes during the year 1883	13,499 32	13,499 32
Residue " " given for reinsurance	24 35	24 35

HOWICK FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, GORRIE.

Commenced business 10th July, 1873.

President—JAMES EDGAR. | *Secretary*—T. F. MILLER.

Unassessed premium note capital, $107,046.86.

ASSETS.

Actual cash on hand at head office		$985 62
Amount unpaid of assessments levied during 1883		641 20
" " " " in prior years, not extended	$319 84	
" of premium notes in force, after deducting all payments thereon and assessments levied		107,046 86
Total assets		$108,673 68

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$172 60	
Cash received for assessments levied in 1883		$5,131 71
" " " years prior to 1883		251 75
Cash borrowed		720 00
Total receipts		$6,103 46

EXPENDITURE.

Expenses of Management:

Amount paid to agents for commission	$61 00
" " investigation and adjustment of claims	61 06
" " interest	23 63
" " statutory assessment or certificate	77 89
" " printing, stationery and advertising	50 00
" " rent and taxes	7 50
" " salaries, directors' and auditors' fees	661 40
" " travelling expenses	20 00
" " postage, telegrams and express	90 25
" " other expenses	28 28
Expenses of management	$1,081 01

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	3,231 75
" " rebate	7 68
" " loans repaid	970 00
Total expenditure	$5,290 44

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	2,615,086 00	2,615,086 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,998	2,450,194 00
" new and renewed during 1883	737	942,571 00
Gross number during 1883	2,735	3,392,765 00
Less expired and cancelled in 1883	658	777,679 00
Net risks in force on mutual system 31st December, 1883	2,077	2,615,086 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	130,754 30	130,754 30
Amount of all premium notes, after deducting all payments thereon and assessments levied	107,046 86	107,046 86
Amount of premium notes received during the year 1883	47,128 55	47,128 55

THE HURON AND MIDDLESEX MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, LONDON.

Commenced business 17th December, 1878.

President—L. C. Leonard. | *Secretary*—Henry L. Ainslie.

Unassessed premium note capital, $25,391.09

Assets.

Actual cash on hand at head office	$3 86	
Cash on deposit to the Company's credit, not drawn against, in the Federal Bank agency at London	106 71	
		$110 57
Cash in agents' hands, acknowledged by them to be due and considered good		495 63
Amount unpaid of assessments levied during 1883		991 62
" " " prior to 1883 (not extended)	$265 55	
Amount of short date notes, or due bills, less than one year overdue		1,258 08
" premium notes in force, after deducting all payments thereon and assessments levied	$25,391 09	
" less residue of premium notes given for reinsurance	80 25	
		25,310 84
Total assets		$28,166 74

Liabilities.

Amount of losses adjusted	$2,045 00	
" " resisted	1,700 00	
		$3,745 00
Total liabilities		$3,745 00

Receipts.

Cash at head office, as per last statement (not extended)	$289 65	
Cash received as first payments, being part payment of premium notes		$9,370 51
" for assessments levied in 1883		4,203 98
" " " years prior to 1883		354 08
" for interest during 1883		27 45
" from transfers and extra premiums		29 69
Total receipts		$13,985 71

Expenditure.

Expenses of Management:

Amount paid for commission to agents	$2,229 63
" " fuel and light	25 90
" " investigation and adjustment of claims	57 84
" " interest	87 31
" " statutory assessment	30 94
" " printing, stationery and advertising	285 83
" " rent and taxes	104 00
" " salaries, directors' and auditors' fees	2,451 49
" " travelling expenses	28 50
" " postage, telegrams and express	155 99
" " other expenses	13 80
Expenses of management	5,471 23

Miscellaneous payments:

Cash paid for losses which occurred prior to 1883	$3,114 62	
" " " " during 1883	3,585 27	
		6,699 89
" " reinsurances		392 92
" " rebate, abatement and returned premiums		300 75
" " loans repaid		1,300 00
Total expenditure		$14,164 79

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Three years.	Total.
	$ c.	$ c.	$ c.
Mutual	91,519 00	1,205,555 00	1,297,074 00
Reinsured	8,250 00	26,552 00	34,802 00
Net risks carried by Company 31st December, 1883	83,269 00	1,179,003 00	1,262,272 00

MOVEMENTS IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,549	958,534 00
New and renewed during 1883	1,230	854,039 00
Gross number during 1883	2,779	1,812,573 00
Less expired and cancelled in 1883	789	515,499 00
Net risks in force 31st December, 1883	1,990	1,297,074 00

BUSINESS TRANSACTED:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	3,876 64	55,432 66	59,309 30
Amount of all premium notes, after deducting all payments thereon and assessments levied	....	....	25,391 09
Amount of premium notes received during the year 1883	6,309 82	34,850 95	41,160 77
Residue of premium notes given for reinsurance			80 25

THE EAST LAMBTON FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WATFORD.

Commenced business 5th November, 1875.

President.—JOHN DALLAS. | *Secretary.*—W. G. WILLOUGHBY.

Unassessed premium note capital, $18,415.94.

ASSETS.

Market value of shares, bonds, debentures and securities		$800 00
Actual cash on hand at head office	$153 55	
Cash on deposit, to Company's credit, in Federal Bank, Strathroy	2,266 84	
		2,420 39
Cash in agents' hands, acknowledged by them to be due, and considered good		6 15
Interest		
Amount of short date notes, or due bills, less than one year overdue		504 99
" " " " one year or more overdue (not extended)	$1 80	
" premium notes in force, after deducting all payments thereon and assessments levied	$18,415 94	
" less residue of premium notes given for reinsurance	31 50	
		18,384 44
Total assets		$22,115 97

LIABILITIES.

Due to Agents	$0 91
Total liabilities	$0 91

RECEIPTS.

Cash at head office, as per last statement (not extended)	$2,181 88	
Cash received as first payments, being part payment of premium notes		$5,090 41
" for interest		168 55
" debentures		700 00
" refund		2 50
Total receipts		$5,961 46

Expenditure.

Expenses of Management:

Amount paid for commission to agents	$419 00
" " statutory assessment	57 10
" " printing, stationery and advertising	86 30
" " rent and taxes	1 00
" " salaries, directors' and auditors' fees	424 20
" " postage, telegrams and express	53 51
" " travelling expenses	15 00
" " other expenses	5 40
Total expenses of management	1,061 51

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	3,415 05
" " returned premiums	194 08
" " reinsurances	40 71
" " debenture	1,000 00
" " refunds, etc.	11 60
Total expenditure	$5,722 95

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	2,095,342 00	2,095,342 00
Reinsured		6,500 00
Net risks carried by Company on 31st December, 1883		2,088,842 00

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,803	1,768,694 00
" new and renewed during 1883	842	912,235 00
Gross number during 1883	2,645	2,680,929 00
Less expired and cancelled in 1883	624	585,587 00
Net risks 31st December, 1883	2,021	2,095,342 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	Less than three years.	Three year risks.	Total.
Amount of face of all premium notes held by Company, and legally liable to assessment	$ c.	$ c. 18,415 94	$ c. 18,415 94
Amount of all premium notes, after deducting all payments thereon and ssessments levied		18,415 94	18,415 94
Amount of premium notes received during the year 1883		8,042 08	8,042 08
Residue of premium notes given for reinsurance		31 50	31 50

LENNOX AND ADDINGTON GRANGE MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, NAPANEE.

Commenced business 17th August, 1876.

President—J. B. AYLESWORTH. — *Secretary*—JAMES DALY.

Unassessed premium note capital, $13,086.23.

ASSETS.

Cash value of real estate		$176 06
Actual cash on hand at head office		329 68
Amount unpaid of assessments levied during 1883		579 40
" " in prior years (not extended)	$154 12	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		13,086 23
Total assets		$14,171 37

LIABILITIES.

Amount of unpaid loans from banks or other sources	$1,700 00
" premium notes held for assessment	15 00
Total liabilities	$1,715 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$445 63	
Cash received as first payments, being part payment of premium notes		$17 09
" for assessments levied in 1883		2,889 30
" " " years prior to 1883		111 60
" for interest		3 00
Cash borrowed during 1883		1,715 00
Total receipts		$4,735 99

EXPENDITURE.

Expenses of Management:

Amount paid for interest	$151 63
" statutory assessment or certificate	30 07
" printing, stationery and advertising	22 25
" salaries, directors' and auditors' fees	294 00
" postage, telegrams and express	18 56
" fuel and light	13 65
" travelling expenses	6 50
" other expenses	15 28
Expenses of management	$551 94

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	1,350 00
Repayment of loans	2,950 00
Total expenditure	$4,851 94

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	927,145 00	927,145 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amoun
		$ c.
Policies in force 31st December, 1882	763	926,836 00
" new and renewed during 1883	246	297,460 00
Gross number during 1883	1,009	1,224,296 00
Less expired and cancelled in 1883	261	297,151 00
Net risks in force on mutual system 31st December, 1883	748	927,145 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	17,462 54	17,462 54
Amount of all premium notes, after deducting all payments thereon and assessments levied	13,086 23	13,086 23
Amount of premium notes received during the year 1883	4,461 78	4,461 78

LOBO MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, COLDSTREAM.

Commenced business 11th August, 1882.

President—C. M. SIMMONS. | *Secretary*—J. T. WOOD.

Unassessed premium note capital, $6,531.61.

ASSETS.

Actual cash on hand at head office		$62 31
" to Company's credit not drawn against in Federal Bank, London		320 46
Amount unpaid of assessments levied in 1883		16 70
Amount of premium notes in force, after deducting all payments thereon and assessments levied		6,531 61
Total assets		$6,931 08

LIABILITIES—None.

RECEIPTS.

Cash at Head Office, as per last statement, (not extended)	$113 61	
Cash received as first payments, being part payment of premium notes		119 71
" for assessments levied in 1883		226 69
" interest		6 92
" additional risk, etc.		1 75
Total receipts		$355 07

EXPENDITURE.

Expenses of Management:	
Amount paid for statutory certificate	3 82
" printing and stationery	20 10
" salaries	40 00
" postage and telegram	10 99
" agent's fees	10 50
" other charges	50
Total expenditure	$85 91

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	178,345 00	178,345 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	90	118,821 00
" taken during 1883, new and renewed	47	59,524 00
Gross numbers and amount during 1883	137	178.345 00
Net risks in force on mutual system, 31st December, 1883	137	178,345 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	7,133 80	7,133 80
Amount of all premium notes, after deducting all payments thereon and assessments levied	6,531 61	6,531 61
Amount of premium notes received during the year 1883	2,380 96	2,380 96

LONDON TOWNSHIP MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ARVA.

Commenced business 27th May, 1882.

President—EDWARD ROBERTS. | *Secretary*—ED. DAUN.

Unassessed premium note capital, $8,596.10.

ASSETS.

Cash in Royal Standard Loan Company at 31st December, 1883	$301 91
Amount unpaid of assessments levied during 1883	64 20
Amount of premium notes in force, after deducting all payments thereon and assessments levied	8,596 10
Total assets	$8,962 21

LIABILITIES.

Amount of borrowed money	150 00
Total liabilities	$150 00

RECEIPTS.

Cash received for assessments levied in 1883	502 13
" borrowed during 1883	300 00
" received from all other sources	3 20
Total receipts	$805 33

EXPENDITURE.

Expenses of Management:

Amount paid for commission to Agents	$59 50
" legal advice	1 00
" statutory assessment	6 28
" printing, stationery and advertising	14 40
" salaries, directors' and auditors' fees	69 75
" postage, telegrams and express, etc	7 07
" interest	45 42
Total expenses of Management	203 42
Cash paid for re-payment of loans	300 00
	503 42

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	3,500 00	27,670 00	4,200 00	272,447 00	307,817 00

MOVEMENT IN RISKS.

Mutual System.

—	Number.	Amou
		$ c.
Policies, new during 1883	165	194,587 00
" taken during 1883, new and reserved	119	122,930 00
Gross number during 1883	284	317,517 00
Deduct, expired and cancelled in 1883	12	9,700 00
Net risks in force 31st December, 1883	272	307,817 00

PREMIUM NOTES OR UNDERTAKINGS.

—	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	42 00	497 16	100 40	8,522 87	9,162 43
Amount of all premium notes on policies in force December 31st, 1883, after deducting all payments thereon, and assessments levied	33 36	481 32	98 24	7,977 18	8,596 10
Amount of premium notes received during the year 1883	15 60	347 76	78 80	3,311 52	3,753 68

McGILLIVRAY MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WEST McGILLIVRAY.

Commenced business 2nd May, 1877.

President—ANDREW ROBINSON. | *Secretary*—WM. FRASER.

Unassessed premium note capital, $7,133.28.

ASSETS.

Amount of cash at head office	$65 11	
Cash on deposit to Company's credit, not drawn against, in the Bank of Commerce, at Parkhill	1,700 00	
		$1,765 11
Amount of unpaid assessments levied in years prior to 1883 (not extended)	$93 90	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		7,133 28
Total assets		$8,898 39

LIABILITIES.—(None.)

RECEIPTS.

Cash at head office, as per last statement, (not extended)	$1,754 42	
Cash received for membership fees, not being part payment of premium notes		$72 30
Cash received for interest		80 57
" from bills receivable		16 38
Total receipts		$169 25

EXPENDITURE.

Expenses of Management:

Amount paid for statutory assessment	$9 35
" printing	1 50
" salary, and auditors' fees	29 00
Total expenses of management	$39 85

Miscellaneous Payments:

Cash paid Treasurer for amount due him 1882	111 31
" for expenditure, other than foregoing	7 40
Total expenditure	$158 56

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	297,220 00	297,220 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force December 31st, 1882	277	289,770 00
" taken during 1883, new and renewed	22	12,050 00
Gross number and amount of risks in force on 31st December, 1883	299	301,820 00
Deduct, expired and cancelled in 1883	5	4,600 00
Net risks in force December 31st, 1883	294	297,220 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	
	$ c.	
Amount of face of all premium notes held by Company, and legally liable to assessments	7,133 28	7,133 28
Amount of all premium notes, after deducting all payments thereon and assessments levied	7,133 28	7,133 28
Amount of premium notes received during year 1883	289 20	289 20

McKILLOP MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, LOT 17, CON. 5, McKILLOP.

Commenced business May 20th, 1876.

President—THOS. E. HAYS. | *Secretary*—W. J. SHANNON.

Unassessed premium note capital, $43,588.49.

ASSETS.

Actual cash on deposit to Company's credit, not drawn against, in Bank of Commerce, Seaforth	$1,898 65
Amount unpaid of assessments levied during 1883	219 70
" " " in prior years (not extended)...$120.95	
Amount of premium notes in force, after deducting all payments thereon and assessments levied	43,588 49
Total assets	$45,706 84

LIABILITIES.

Amount of losses resisted	$1,100 00
Total liabilities	$1,100 00

RECEIPTS.

Cash at head office, as per last statement (not extended) $9.61	
Cash received at taking of applications	$125 00
Cash received for assessments levied in 1883	3,111 95
" " " years prior to 1883	178 15
Cash borrowed during 1883	130 00
Cash received from fees, etc	15 15
Total receipts	$3,560 25

EXPENDITURE.

Expenses of Management:

Amount paid for investigation and adjustment of claims	43 30
" interest	62 97
" statutory assessment	67 61
" printing, stationery and advertising	47 42
" salaries, directors' and auditors' fees	390 10
" postage, telegrams and express	28 53
Total expenses of management	$639 93

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	187 50
" " " before 1883	500 00
" loans repaid	330 00
" rebate	1 80
" sundries	11 98
Total expenditure	1,671 21

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	2,128,694 00	2,128,694 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,708	2,094,440 00
" new and renewed during 1883	250	309,375 00
Gross number during 1883	1,958	2,403,815 00
Less expired and cancelled in 1883	245	275,121 00
Net risks in force on mutual system, 31st December, 1883	1,713	2,128,694 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force December 31st, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	56,051 58	56,051 58
Amount of all premium notes, after deducting all payments thereon and assessments levied	43,588 49	43,588 49
Amount of premium notes renewed during the year 1883	8,118 50	8,118 50

NICHOL MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, FERGUS.

Commenced business, 1st May, 1860.

President—WILLIAM TAYLOR. | *Secretary*—JOHN BEATTIE.

Unassessed premium note capital, $32,706.18.

ASSETS.

Actual cash on hand at head office	$724 81
Amount unpaid of assessments levied during 1883	700 16
" " " " in prior years (not extended).$472 89	
" of short date notes or due bills, less that one year overdue	259 94
" " " one year or more overdue (not extended) $358.99	
Amount of premium notes in force, after deducting all payments thereon and assessments levied	$32,706 18
Total assets	$34,391 09

LIABILITIES.

Amount of loss reported	$20 00
Total liabilities	$20 00

RECEIPTS.

Cash at head office, as per last statement (not extended) $851.07	
Cash received for interest	$49 11
Cash received as first payments, being part payment of premium notes, at head office	1,096 90
Cash received for assessments levied in 1883	1,593 41
" " " years prior to 1883	410 07
" short date notes or due bills	643 15
Total receipts	$3,792 64

EXPENDITURE.

Expenses of Management:

Amount paid for fees to agents	$907 50
" investigation and adjustment of claims	29 30
" statutory assessment	58 25
" printing, stationery and advertising	71 89
Carried forward	$1,066 94

Brought forward	$1,066 94
Amount paid for salaries, directors' and auditors' fees	599 54
" postage, telegrams and express	51 10
" travelling expenses	10 00
Expenses of management	$1,727 58
Miscellaneous Payments:	
Cash paid for losses which occurred prior to 1883	821 00
" " " during 1883	1,342 00
" rebate, abatement and returned premiums	13 55
Expenditure, other than the foregoing	14 77
Total expenditure	$3,918 90

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	1,957,947 06	1,957,947 06

MOVEMENT IN RISKS.

Mutual system.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,486	1,802,810 00
New and renewed during 1883	609	781,300 00
Gross numbers and amount during 1883	2,095	2,584,110 00
Less expired and cancelled in 1883	525	626,162 94
Net risks in force on mutual system, 31st December, 1883	1,570	1,957,947 06

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	38,951 72	38,951 72
Amount of all premium notes, after deducting all payments thereon and assessments levied	32,706 18	32,706 18
Amount of premium notes received during the year 1883	15,592 00	15,592 00

EAST AND WEST NISSOURI AND WEST ZORRA MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, KINTORE.

Commenced business 25th May, 1878.

President—WM. COLYER. | *Secretary*—E. J. PEARSON.

Unassessed premium note capital $50,146.78.

ASSETS.

Actual cash on hand at head office, 31st December, 1883		$214 11
Amount unpaid of assessments levied during 1883		1,233 00
Amount of premium notes in force after deducting all payments thereon and assessment levied		50,146 78
Total assets		$51,593 89

LIABILITIES.

Amount of adjusted losses		$1,300 00
Total liabilities		$1,300 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$70 72	
Cash received as first payments or deposits, being part payment of premium notes		170 00
Cash received for assessments levied in 1883		417 55
Cash received at head office for certificates to steam threshers		11 50
Cash borrowed		125 00
Total receipts		$724 05

EXPENDITURE.

Expenses of Management:	
Amount paid for statutory assessment	$26 72
" printing, stationery and advertising	39 59
" rent	5 00
" salaries, directors' and auditors' fees	84 00
" investigation of claims	8 00
" interest	2 60
" travelling expenses	8 25
" postage, etc	20 50
" other expenses	5 00
	$199 66
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	$256 00
" repayment of loans	125 00
Total expenditure	$580 66

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	1,075,566 00	1,075,566 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	564	828,116 00
Policies new and renewed during 1883	231	407,040 00
Gross number during 1833	795	1,235,156 00
Less expired and cancelled in 1883	101	159,590 00
Net risks in force on mutual system 31st December, 1883	694	1,075,566 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessment	53,778 30	53,778 30
Amount of all premium notes, after deducting all payments thereon and assessments levied	50,146 78	50,146 78
Amount of premium notes renewed during the year 1883	20,352 00	20,352

NORFOLK COUNTY FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, SIMCOE.

Commenced business 30th January, 1882.

President—WM. DAWSON. | *Secretary*—WM. ROBERTS.

Unassessed premium note capital, $8,824.69.

ASSETS.

Cash on deposit to Company's credit in Federal Bank of Canada, Simcoe..	$625 95
" in agents' hands	3 20
Amount of premium notes in force after deducting all payments thereon and assessments levied	8,824 69
Amount unpaid of assessments levied during 1883	223 97
Total assets	$9,677 81

LIABILITIES.

Bill payable	$750 17
Total liabilities	$750 17

RECEIPTS.

Cash at head office as per last statement, (not extended)....	$84 59	
Cash received as first payments on deposits, being part payment of premium notes		$249 87
Cash received for assessments levied in 1883		1,979 58
Cash for transfer and other fees		16 25
Money borrowed		700 00
Total receipts		$2,945 70

EXPENDITURE.

Expenses of Management:	
Amount paid for commission	$72 25
" " law costs	10 00
" " printing, stationery and advertising	38 22
" " interest	11 47
" " rent and taxes	52 00
" " statutory assessment	14 42
" " salaries, directors' and auditors' fees	539 90
" " postage, telegrams and express	21 11
" " investigation of claims	2 90
" " sundries	18
Total expenses of management	$762 45
Miscellaneous Expenses:	
Cash paid for losses which occurred during 1883	$1,703 72
Total expenditure	$2,466 17

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	775,856 00	775,856 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	471	446,655 00
" new and renewed during 1883	368	334,201 00
Gross number during 1883	839	780,856 00
Less expired and cancelled in 1883	7	5,000 00
Net risks in force, 31st December, 1883	832	775,856 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS.

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes legally liable to assessment	11,601 65	11,601 65
Amount of all premium notes after deducting all payments thereon and assessments levied	8,824 69	8,824 69
Amount of premium notes received during the year 1883	4,999 34	4,999 34

ONEIDA FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, TOWN HALL, ONEIDA.

Commenced business 27th March, 1875.

President—JOHN SMITH. | *Secretary*—JOHN SENN.

Unassessed premium note capital, $5,874.09.

ASSETS.

Actual cash on hand at head office		$50 02
Amount unpaid of assessments levied during 1883		129 13
Amount of premium notes in force, after deducting all payments thereon and assessments levied		5,874 09
Total assets		$6,053 24

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$109 09	
Cash received at taking of application		$62 00
" for assessments levied during 1883		2,261 91
" for steam threshing certificates		7 50
Total receipts		$2,331 41

EXPENDITURE.

Expenses of Management:

Amount paid for investigation and adjustment of claims	$4 00
" " fuel and light	2 00
" " statutory assessment or certificate	11 98
" " printing and stationery	15 60
" " salaries, directors' and auditors' fees	50 00
" " postage, telegrams and express	3 90
" " expenses of assessment of 1883	3 00
Total expenses of management	$90 48

Miscellaneous Expenses:

Amount paid for losses which occurred during 1883	$2,300 00
Total expenditure	$2,390 48

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.
Mutual	1,620 90	650 00	237,161 00	399,901 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	301	371,079 00
New and renewed during 1883	76	89,208 00
Gross number during 1883	377	460,287 00
Less expired and cancelled in 1883	59	60,386 00
Net risks in force on mutual system, 31st December, 1883	318	399,901 00

CLASSIFICATION OF RISKS:

Farm and Non hazardous:

PREMIUM NOTES OR UNDERTAKINGS.

On policies in force 31st December, 1883.

——	Three years risks.	Four years risks.	Five years risks.	Total.
	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by company and legally liable to assessment	2,785 28	13 00	5,467 44	8,265 72
Amount of all premium notes, after deducting all payments thereon and assessments levied	....	....	....	5,874 09
Amount of premium notes received during the year 1883	1,305 41	....	52 50	1,357 91

COUNTY OF PEEL FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, BRAMPTON.

Commenced business 24th June, 1876.

President—THOMAS HOLTBY. | *Secretary*—LUTHER CHEYNE.

Unassessed premium note capital, $36,899.69.

ASSETS.

Actual cash on hand at head office	$559 88
Amount unpaid of assessments levied during 1883	1,158 21
" " " in prior years (not extended)..$60.40	
" of premium notes in force, after deducting all payments thereon and " assessments levied	36,899 69
Total assets	$38,617 78

LIABILITIES.

Amount of adjusted losses	$1,500 00
" salaries, $276.50; rent, etc., $40	316 50
Total liabilities	$1,816 50

RECEIPTS.

Cash at head office, as per last statement (not extended) $82.85	
" received as first payments, being part payment of premium notes	$744 86
" " for assessments levied in 1883	3,879 89
" " " " years prior to 1883	248 82
" " for engine licenses	7 00
Total receipts	$4,880 57

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents	$238 50
" investigation and adjustment of claims	29 60
" interest	103 54
" statutory assessment	51 28
Carried forward	$43 92

Brought forward	$430 92
Amount paid for printing, stationery and advertising	82 20
" salaries, directors' and auditors' fees	311 00
" postage, telegrams and express	67 83
" other expenses	13 09
Total expenses of management	$905 04

Miscellaneous Payments :

Cash paid for losses which occurred during 1883	1,798 50
" repayment of loans	1,700 00
Total expenditure	$4,403 54

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Four years.	Total.
	$ c.	$ c.
Mutual	2,200,688 00	2,200,688 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,426	1,836,360 00
" new and renewed during 1883	477	631,645 00
Gross number during 1883	1,903	2,468,005 00
Less expired and cancelled in 1883	239	267,317 00
Net risks in force on mutual system, 31st December, 1883	1,664	2,200,688 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Four year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	47,978 58	47,978 58
Amount of all premium notes, after deducting all payments thereon and assessments levied	36,899 69	36,899 69
Amount of premium notes renewed during the year 1883	14,064 80	14,064 80

PUSLINCH MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ABERFOYLE.

Commenced Business 1859.

President—DUNCAN MCFARLANE. | *Secretary*—JAMES SCOTT.

Unassessed premium note capital, $6,116.67.

ASSETS.

Actual cash on hand at head office		$334 16
Amount unpaid of assessments levied during years prior to 1883 (not extended)	$6.90	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		6,116 67
Total assets		$6,450 83

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$220 16	
Cash received for membership fees, not being part payment of premium notes		$4 00
Cash received as first payments, being part payment of premium notes		129 69
" for assessments levied in years prior to 1883		12 00
" for interest		11 00
Total receipts		$156 69

EXPENDITURE.

Expenses of Management :

Amount paid for statutory assessment	$10 55
" printing, stationery and advertising	22 00
" salaries, directors' and auditors' fees	4 00
" postage, telegrams and express	3 14
" travelling expenses	3 00
Total expenditure	$42 69

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	346,150 00	346,150 00

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	6,923 00	6,923 00
Amount of all premium notes, after deducting all payments thereon and assessmsnts levied	6,116 67	6,116 67
Amount of premium notes renewed during the year 1883	2,647 80	2,647 80

SALTFLEET AND BINBROOK MUTUAL FIRE INSURANCE COMPANY

HEAD OFFICE, ELFRIDA.

Commenced business 30th July, 1880.

President—JONATHAN POTTRUFF. | *Secretary*—W. C. WEBSTER.

Unassessed premium note capital, $4,363.61.

ASSETS.

Actual cash on hand at head office	$109 97
Amount of assessments which were levied during 1883	7 29
" unpaid of short date notes, or due bills, less than one year overdue	6 29
" " premium notes in force, after deducting all payments thereon and assessments levied	4,363 61
Total assets	$4,487 16

LIABILITIES.

Amount of unadjusted losses	$450 00
Total liabilities	$450 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$20 21	
Cash received for fees or surveys		$230 28
" for membership fees, not being part payment of premium notes		107 00
Cash received for assessments which we levied in 1883		292 98
" interest		1 72
" carpenters' risks		1 15
Total receipts		$633 13

EXPENDITURE.

Expenses of Management:	
Amount paid to agents for fees	$108 50
" for statutory assessment	9 65
" printing, stationery and advertising	26 63
" salaries, directors' and auditors' fees	48 50
" postage, telegrams and express	4 68
" assessments returned	331 71
Total expenses of management carried out	$529 67
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	8 00
" rebate	5 70
Total expenditure	$543 37

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	Three years.	Total.
	$ c.	$ c.
Mutual	318,645 00	318,645 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	264	299,036 00
New and renewed during 1883	117	149,765 00
Gross number during 1883	381	448,801 00
Less expired and cancelled in 1883	119	130,156 00
Net risks in force 31st December, 1883	262	318,645 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	4,846 61	4,846 61
Amount of all premium notes, after deducting all payments thereon and assessments levied	4,363 61	4,363 61
Amount of premium notes received during the year 1883	2,273 70	2,273 70

SAUGEEN MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, MOUNT FOREST.

Commenced business March, 1877.

President—JAMES MURDOCK. | *Secretary*—HENRY L. DRAKE.

Unassessed premium note capital, $19,147.64.

ASSETS.

Actual cash on hand at head office		$15 93
" " deposit in Ontario Bank, Mount Forest		532 93
Amount unpaid of assessments levied during 1883		3,329 48
" " " " in prior years (not extended	$388 48	
" of premium notes in force, after deducting all payment thereon and assessments levied	19,147 64	
Less premium notes given by Company for reinsurance	379 66	
		18,767 98
Total assets		$22,646 32

LIABILITIES.

Amount of reported loss	$372 50
" of unpaid loans from banks	2,614 00
" due for reinsurance	17 00
" " salary	165 00
" " outstanding account	47 00
Total liabilities	$3,215 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$500 21	
" received at taking of application		$1,120 64
" " for assessments levied in 1883		2,068 94
" " " " prior to 1883		42 34
" " for interest		10 07
" borrowed		1,264 00
" receipt from transfer fees		17 55
" " " refunds		11 05
Total receipts		$4,534 59

EXPENDITURE.

Expenses of Management:

Amount paid for commission to agents	$742 27
" " Division Court costs	3 39
" " law costs other than above	5 78
" " interest	160 27
" " statutory assessment or certificate	27 09
" " printing, stationery and advertising	209 68
" " salaries, directors' and auditors' fees	911 05
" " postage, telegrams and express	10 46
" " fuel, light and rent	37 00
" " investigation and adjustment of claims	29 95
Expenses of management	$2,136 94

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	$1,110 35
" " " " prior to 1883	90 00
" rebate, abatement and returned premiums	61 81
" reinsurances	77 91
" repayment of loan	960 00
" insurance convention	8 00
" office furniture	40 93
Total expenditure	$4,485 94

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Total.
	$ c.
Mutual	1,062,024 00
Of which was reinsured	17,554 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,053	839,316 00
" new and renewed during 1883	584	518,040 00
Gross nnmber during 1883	1,637	1,357,356 00
Less expired and cancelled in 1883	397	295,332 00
Net risks in force 31st December, 1883	1,240	1,062,024 00

BUSINESS DONE BY COMPANY:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company and legally liable to assessment	683 90	25,860 26	26,544 16
Amount of all premium notes, after deducting all payments thereon and assessments levied	....	....	19,147 64
Amount of premium notes received during the year 1883	683 90	12,240 06	12,923 96
Residue of premium notes given by the Company for reinsurances	....	379 66	379 66

SIMCOE COUNTY MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, KEENANSVILLE.

Commenced business 21st June, 1878.

President—JAMES D. EGAN. | *Secretary*—THOMAS R. CARMICHAEL.

Unassessed premium note capital, $2,387.20.

ASSETS.

Actual cash on hand at head office		$52 50
Amount unpaid of assessments levied during 1883		161 32
" " " " before 1883 (not extended)	$39 18	
" of premium notes in force, after deducting all payments thereon and assessments levied		2,387 20
Total assets		$2,601 02

LIABILITIES—(None).

RECEIPTS.

Cash received for membership fees (not being part payment of premium notes)	$14 00
" for assessments levied in years prior to 1883	35 66
" " " 1883	122 04
Total receipts	$171 70

EXPENDITURE.

Expenses of Management:

Amount paid for salaries, directors' and auditors' fees	$99 05
" " statutory assessment	4 48
" " sundries	15 67
Total expenditure	$119 20

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	1,100 00	3,375 08	132,305 00	725 00	16,873 00	154,378 08

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	110	138,666 33
New and renewed during 1883	47	71,468 75
Gross number during 1883	157	210,135 08
Less expired and cancelled in 1883	45	55,757 00
Net risks in force 31st December, 1883	112	154,378 08

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Two year risks.	Three year risks.	Four year risks.	Five year risks.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	100 25	57 80	2,198 75	9 15	286 48	2,652 43
Amount of all premium notes, after deducting all payments thereon and assessments levied	90 23	52 02	1,978 88	8 24	257 84	2,387 20
Amount of premium notes received during the year 1883	19 25	40 30	969 73	9 15	176 66	1,215 09

THE SOUTHWOLD FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, SHEDDEN.

Commenced business 9th September, 1878.

President—CHAS. EDMONDS. | *Secretary*—R. N. STAFFORD.

Unassessed premium note capital, $11,034.44.

ASSETS.

Actual cash on hand at head office		$0 35
Cash on deposit, South Western Loan Society, St. Thomas		250 00
Amount unpaid of assessments levied prior to 1883 (not extended)	$1 83	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		11,034 44
Total assets		$11,284 79

LIABILITIES.

Amount of losses reported	$300 00
Total liabilities	$300 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$256 26	
Cash received at taking of application		$213 00
" for assessments levied in 1883		71 64
" interest		11 01
Total receipts		$295 65

EXPENDITURE.

Expenses of Management:

Amount paid for commission	$142 00
" statutory assessment	17 66
" printing and stationery	21 25
" salaries, secretary's and auditors' fees	84 00
" postage	3 32
" sundries	7 33
Total expenses of management	275 56
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	26 00
Total expenditure	$301 56

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	599,275 00	599,275 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	446	547,025 00
Policies new and renewed during 1883	142	188,275 00
Gross number during 1833	588	735,300 00
Less expired and cancelled in 1883	109	136,025 00
Net risks in force on mutual system 31st December, 1883	479	599,275 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	Five year risks.	Total.
	$ c.	$ s.
Amount of face of all premium notes held by Company, and legally liable to assessment	11,985 50	11,985 50
Amount of all premium notes, after deducting all payments thereon and assessments levied	11,034 44	11,034 44
Amount of premium notes received during the year 1883	3,765 50	3,765 50

SYDENHAM MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ANNAN.

Commenced business September, 1869.

President—GIDEON HARKNESS. | *Secretary*—HUGH READ.

Unassessed premium note capital, $29,527.66.

ASSETS.

Cash on hand		$41 69
Cash on deposit in the Post Office Savings Bank, Owen Sound	$497 61	
" " Molson's Bank, Owen Sound	154 00	
		651 61
Cash in agents' hands, acknowledged by them to be due, and considered good		97 16
Amount unpaid of assessments, levied before 1883 (not extended)	$76 47	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		29,527 66
Amount due on a license		5 00
Total assets		$30.323 12

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$213 92	
Cash received for membership fees		$242 50
" as first payments, being part payment of premium notes		566 80
" for assessments levied in years prior to 1883		44 26
" for interest		11 46
" for licenses		40 00
Total receipts		$905 02

EXPENDITURE.

Expenses of Management:

Amount paid for law costs	$10 00
" investigation and adjustment of claims	6 00
" statutory assessment or certificate	42 40
" printing, stationery and advertising	97 95
" rent and taxes	8 30
" salaries, directors' and auditors' fees	202 50
" postage, telegrams and express	24 90
Expenses of management	$392 05

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	28 50
" " rebate	4 09
" " sundries	1 00
Total expenditure	$425 64

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	11,749 00	23,869 00	1,310,039 00	41,530 00	131,057 00	1,518,244 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,177	1,330,530 00
" new and renewed during 1883	485	584,355 00
Gross number during 1883	1,662	1,914,885 00
Less expired and cancelled in 1883	300	396,641 00
Net risks in force 31st December, 1883	1,362	1,518,244 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	One year risks.	Two year risks.	Three year risks.	Four year risks.	Five year risks.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	252 82	463 88	27,026 80	597 94	2,724 51	31,325 95
Amount of all premium notes, after deducting all payments thereon and assessments levied	179 28	424 18	25,692 81	799 29	2,432 10	29,527 66
Amount of premium notes received during the year 1882	184 75	327 13	10,205 36	441 50	891 53	12,050 27

TOWNSEND FARMERS' MUTUAL FIRE INSURANCE COMPANY.

Commenced business 10th April, 1879.

HEAD OFFICE, WATERFORD.

President—ISAAC G. WYCKOFF. | *Secretary*—LYMAN N. COLLVER.

Unassessed premium note capital, $12,707.38.

ASSETS.

Actual cash on hand at head office		$76 19
Amount unpaid of assessments levied in years prior to 1883 (not extended)	$5 35	
" of premium notes in force, after deducting all payments thereon and assessments levied		12,707 38
Total assets		$12,783 57

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$73 32	
Cash received at taking of applications		$116 50
" as first payments, being part payment of premium notes		206 68
" for assessments levied in 1883		17 97
		$341 15

EXPENDITURE.

Expenses of Management:

Amount paid for statutory assessment	$24 80
" " printing, stationery, advertising and postage	23 94
" " salaries, directors' and auditors' fees	215 55
Total expenses of management	264 29

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	73 69
Total expenditure	$337 98

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	842,070 00	842,070 00

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	588	768,125 00
" new and renewed during 1883	233	315,170 00
Gross number during 1883	821	1,083,295 00
Less expired and cancelled in 1883	186	241,225 00
Net risks in force on mutual system 31st December, 1883	635	842,070 00

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	Three year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	13,699 11	13,699 11
Amount of all premium notes, after deducting all payments thereon and assessments levied	12,707 38	12,707 38
Amount of premium notes received during the year 1883	5,153 86	5,153 86

THE USBORNE AND HIBBERT MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, FARQUHAR.

Commenced business 28th June, 1876.

President—ROBT. GARDINER. | *Secretary*—N. J. CLARK.

Unassessed premium note capital, $13,450.34.

ASSETS.

Actual cash on hand at head office	$62 56
" " deposit to Company's credit in Molson's Bank, Exeter	300 00
Amount unpaid of assessments levied in 1883	135 15
" of premium notes in force, after deducting all payments thereon and assessments levied	13,450 34
Total assets	$13,948 05

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended) $36.05	
" received for assessments levied in 1883	$1,024 70
" " " " years prior to 1883	26 77
Total receipts	$1,051 47

EXPENDITURE.

Expenses of Management:	
Amount paid for interest	$21 00
" statutory assessment	26 18
" printing, stationery and advertising	35 25
" rent and taxes	20 00
" salaries, directors' and auditors' fees	240 00
" travelling expenses	15 00
" postage, telegrams and express	33 00
" other expenses	5 20
Expenses of management	$395 63
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	29 33
" repayment of loans	300 00
Total expenditure	$724 96

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	918,490 00	918,490 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	668	832,595 00
" new and renewed during 1883	286	370,175 00
Gross number during 1883	954	1,202,770 00
Less expired and cancelled in 1883	234	284,280 00
Net risks in force on mutual system 31st December, 1883	720	918,490 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	20,174 83	20,174 83
Amount of all premium notes, after deducting all payments thereon and assessments levied	13,450 34	13,450 34
Amount of premium notes received during the year 1883	8,100 84	8,100 84

WALPOLE FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, JARVIS.

Commenced business 27th July, 1867.

President—CHARLES SIMON. | *Secretary*—JOHN HEASMAN.

Unassessed premium note capital, $21,974.60.

ASSETS.

Actual cash on hand at head office	$237 81
Cash in agents' hands, acknowledged by them to be due, and considered good	52 66
Amount of premium notes in force, after deducting all payments thereon and assessments levied	21,974 60
Total assets	22,265 07

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$139 28	
Cash received at taking of application		256 00
" as first payments, being part payment of premium notes		238 51
" for assessments levied in 1883		1,240 29
" " " years prior to 1883		3 91
" for permits for steam thrashers		45 60
Total receipts		1,784 31

EXPENDITURES.

Expenses of Management:	
Amount paid to agents for commission	$10 00
" for investigation and adjustment of claim	10 50
" statutory assessment	54 68
" printing, stationery and advertising	34 30
" salaries, directors' and auditors' fees	249 00
" postage, telegrams and express	5 50
" fuel and light	15 00
" travelling expenses	15 00
Total expenses of management	373 98
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	1,081 80
" " expenditure other than foregoing	145 00
Total expenditure	$1,600 78

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year or less.	Two years.	Three years.	Four years.	Five years.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Mutual	800 00	7,600 00	252,050 00	14,450 00	793,490 00	1,068,390 00

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	759	1,074,385 00
" new and renewed during 1883	183	285,210 00
Gross number during 1883	942	1,359,595 00
Less expired and cancelled in 1883	192	291,205 00
Net risks in force 31st December. 1883	750	1,068,390 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	One year risks.	Two year risks.	Three year risks.	Four year risks.	Five year risks.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	4 00	73 59	3,976 52	284 68	21,700 00	26,038 99
Amount of all premium notes, after deducting all payments thereon and assessments levied	2 96	62 26	3,129 07	260 20	18,520 00	21,974 60
Amount of premium notes received during the year 1883	4 00	31 00	1,437 27	116 30	4,690 24	6,278 81

NORTH WATERLOO FARMERS' MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, WATERLOO.

Commenced business 1st August, 1874.

President—Isaac Devitt. | *Manager*—Levi Stauffer.

Unassessed premium note capital, $96,217.26.

Assets.

Cash on deposit to the Company's credit, not drawn against, in Molson's Bank, Waterloo	$102 21
Amount unpaid of assessments levied during 1883	252 03
" " " " in prior years (not extended)..$22.24	
Amount of premium notes in force, after deducting all payments thereon and assessments levied	96,217 26
Total assets	$96,571 50

Liabilities—(None).

Receipts.

Cash at head office, per last statement, (not extended) $93 75	
Cash received for assessments levied in 1883	$2,250 06
" " " years prior to 1883	369 86
Cash borrowed	1,300 00
Total receipts	$3,919 92

Expenditure.

Expenses of Management:

Amount paid for investigation and adjustment of claims	$22 75
" interest	27 73
" statutory assessment	59 91
" printing, stationery and advertising	53 75
" salaries, directors' and auditors' fees	380 00
" fuel and light	1 00
" postage, telegrams and express	67 70
Expenses of management	$612 84

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	1,998 62
" loans repaid	1,300 00
Total expenditure	$3,911 46

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	2,027,859 00	2,027,859 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	1,167	1,855,679 00
" new and renewed during 1883	252	454,780 00
Gross number during 1883	1,419	2,310,459 00
Less expired and cancelled in 1883	203	282,600 00
Net risks in force on mutual system December 31st, 1883	1,216	2,027,859 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Amount.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	110,782 98	110,782 98
Amount of all premium notes, after deducting all payments thereon and assessment levied	96,217 26	96,217 26
Amount of premium notes renewed during the year 1883	23,295 00	23,295 00

WEST WAWANOSH MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, ST. HELENS.

Commenced business 13th May, 1879.

President—CHAS. GIRVIN. | *Secretary*—ROBT. MURRAY.

Unassessed premium note capital, $41,673.26.

ASSETS.

Actual cash on hand at head office		$87 96
Amount unpaid of assessments levied before 1883 (not extended)	$20 27	
Amount of premium notes in force, after deducting all payments thereon and assessments levied		41,673 26
Total assets		$41,761 22

LIABILITIES:

Amount due directors	$46 00
Balance of a premium note retained	18 00
Bills payable	300 00
Total liabilities	$364 00

RECEIPTS.

Cash at head office, as per last statement (not extended)	$1.40	
" " at taking of applications		112 00
Cash received as first payments, being part payment of premium notes		$166 78
" for assessments levied before 1883		21 78
" from safe sold, $53.50; steam-thresher certificates, $27.55		81 05
" borrowed money		300 00
Total receipts		$681 61

EXPENDITURE.

Expenses of Management:

Amount paid for interest	$21 00
" statutory assessment	27 12
" printing, stationery and advertising	20 00
" salaries, directors' and auditors' fees	141 00
" postage, telegrams and express	28 63
Expenses of management	$237 75

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	250 00
" a safe, and freight thereon	102 30
" other expenses	5 00
Total expenditure	595 05

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	1,102,735 00	1,102,735 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Polices in force 31st December, 1882	763	840,015 00
New and renewed during 1883	227	277,970 00
Gross number during 1883	990	1,117,985 00
Less expired and cancelled in 1883	11	15,250 00
Net risks in force 31st December, 1883	979	1,102,735 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Five year risks.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	44,109 40	44,109 40
Amount of all premium notes, after deducting all payments thereon and assessments levied	41,673 26	41,673 26
Amount of premium notes received during the year 1883	11,118 80	11,118 80

THE MUTUAL FIRE INSURANCE COMPANY OF THE COUNTY OF WELLINGTON.

HEAD OFFICE, GUELPH.

Commenced business September, 1840.

President—FRED. W. STONE. | *Secretary*—CHARLES DAVIDSON.

Unassessed premium note capital, $260,730.64.

ASSETS.

Cash value of real estate, less encumbrances		$400 00
Actual cash on hand at head office		4 92
" in agents' hands, acknowledged by them and considered good		200 78
Amount unpaid of assessments levied during 1883		16,375 32
" " " " in prior years (not extended)	$875 69	
" of premium notes in force, after deducting all payments thereon and assessments levied		260,730 64
Amount of all other assets		19 81
Total assets		$277,731 47

LIABILITIES.

Amount of unpaid losses	7,047 57
Amount of unpaid loan from bank	3,804 97
Total liabilities	$10,852 54

RECEIPTS.

Cash at head office, as per last statement (not extended)	$425 35	
Cash received as first payments, being part payment of premium notes		$1,397 29
" for assessments levied in 1883		13,588 18
" " " years prior to 1883		190 27
Cash borrowed during 1883		8,285 41
Cash received from Carpenter's risks		52 43
" " assessments on cancelled policies		190 67
" " agents' balances of 1882		16 50
" " interest		1 59
Total receipts		23,722 34

Expenditure.

Expenses of Management:

Amount paid for commission to agents	$1,049 52
" Division Court costs	21 81
" law costs, other than above	27 00
" fuel and light	44 75
" investigation and adjustment of claims	73 09
" interest	261 12
" statutory assessment	86 94
" printing, stationery and advertising	161 45
" rent and taxes	102 25
" salaries, directors' and auditors' fees	2,702 80
" travelling expenses	97 38
" postage, telegrams and express	122 47
" petty charges	78 11
Expenses of management	$4,828 69

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	5,183 33
" rebate, abatements and returned premiums	30 65
" repayment of loans	14,047 53
" office furniture	52 57
Total expenditure	$24,142 77

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Three years.	Total.
	$ c.	$ c.
Mutual	2,753,844 00	2,753,844 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	2,292	2,692,993 00
" new and renewed during 1883	826	1,018,364 00
Gross number and amount during 1883	3,118	3,711,357 00
Less expired and cancelled in 1883	811	957,513 00
Net risks in force on mutual system, 31st December, 1883	2,307	2,753,844 00

BUSINESS TRANSACTED BY COMPANY:

General Fire Insurance.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Three year risks.	Total receipts.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	283,372 60	283,372 60
Amount of all premium notes, after deducting all payments thereon and amounts levied	260,730 64	260,730 64
Amount of premium notes received during the year 1883	108,900 85	108,900 85

THE WESTMINSTER MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, LOT 14, CON. 4, WESTMINSTER.

Commenced business 11th December, 1857.

President—JAMES CRAIG. | *Secretary*—HENRY ANDERSON.

Unassessed premium note capital, $17,588.64.

ASSETS.

Cash on hand at head office	$ 14 48	
Cash on deposit to the Company's credit, not drawn against, in		
Federal Bank agency at London	1,088 70	
London Loan and Savings Company, London	3,847 52	
		$ 4,950 70
Amount of premium notes in force, after deducting all payments thereon and assessments levied		17,588 64
Total assets		$22,539 34

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$6,469 19	
" received as first payments on premium notes		$ 209 84
" " for assessments levied in 1883		1,945 54
" " for interest		310 81
Total receipts		$2,466 19

EXPENDITURE.

Expenses of Management:

Amount paid for investigation and adjustment of claims	$72 00
" " statutory assessment or certificate	34 59
" " printing, stationery and advertising	37 65
" " salaries, directors' and auditors' fees	331 00
Expenses of management	$475 24

Miscellaneous Payments:

Cash paid for losses which occurred during 1883	$2,965 98
" " " prior to 1883	500 00
" rebate	10 80
" treasurer for balance due him, 31st December, 1882	32 66
Total expenditure	$3,984 68

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	Five years.	Total.
	$ c.	$ c.
Mutual	1,099,240 00	1,099,240 00

MOVEMENT IN RISKS.

Mutual System.

———	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	806	1,071,460 00
New and renewed during 1883	193	269,705 00
Gross number during 1883	999	1,341,165 00
Less expired and cancelled in 1883	174	241,875 00
Net risks in force 31st December, 1883	825	1,099,290 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

———	Five years.	Total.
	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	21,985 80	21,985 80
Amount of all premium notes, after deducting all payments thereon and assessments levied	17,588 64	[illegible] 88 64
Amount of premium notes received during the year 1883	5,3[illegible]	[illegible],3[illegible]4 10

TOWNSHIP OF EAST WILLIAMS MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, NAIRN.

Commenced business 8th August, 1875.

President—NEIL MCTAGGART. | *Secretary*—WM. MCCALLUM.

Unassessed premium note capital, $4,972 44.

ASSETS.

Cash in agents' hands, acknowledged by them to be due and considered good		$13 60
Amount unpaid of assessments levied during 1883		26 70
" " " in prior years (not extended)	$85 95	
" of premium notes in force, after deducting all payments thereon and assessments levied		4,972 44
Total Assets		$5,012 74

LIABILITIES.

Amount of borrowed money	$89 08
Total liabilities	$89 08

RECEIPTS.

Cash at head office, as per last statement (not extended)	$85 96	
Cash received as first payments on premium notes		179 62
" " on assessments levied during 1883		367 77
" " " " prior to 1883		36 25
" borrowed from treasurer		1 81
Total receipts		$585 45

EXPENDITURE.

Expenses of Management:	
Amount paid for interest	$40 01
" statutory assessment	9 19
" printing, stationery and advertising	16 25
" salaries, directors' and auditors' fees	50 00
" postage	3 49
" fuel and light	3 00
Expenses of management	121 94
Miscellaneous Payments:	
Cash paid for losses which occurred during 1883	56 77
" loan repaid	491 70
" returned premium	1 00
Total expenditure	$671 41

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

System.	One year.	Two years.	Three years.	Total.
	$ c.	$ c.	$ c.	$ c.
Mutual	2,700 00	1,050 00	283,280 00	287,030 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	254	284,600 00
" new and renewed during 1883	87	95,180 00
Gross number during 1883	341	379,780 00
Less expired and cancelled in 1883	83	92,750 00
Net risks in force on mutual system 31st December, 1883	258	287,030 00

CLASSIFICATION OF RISKS:

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS.

On Policies in force 31st December, 1883.

——	One year risks.	Two year risks.	Three year risks.	Total.
	$ c.	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	54 00	21 00	4,962 80	5,037 80
Amount of all premium notes, after deducting all payments thereon and assessments levied	48 60	18 90	4,904 94	4,972 44
Amount of premium notes renewed during the year 1883	54 00	21 00	1,828 60	1,903 60

THE YARMOUTH MUTUAL FIRE INSURANCE COMPANY.

HEAD OFFICE, YARMOUTH CENTRE.

Commenced business 17th October, 1881.

President—JAS. J. TEEPLE. | *Secretary*—W. E. LEONARD.

Unassessed premium note capital, $5,632.85.

ASSETS.

Actual cash on hand at head office	$7 67
Cash on deposit to the Company's credit, not drawn against, in Southern Loan and Savings Company, St. Thomas	383 30
Amount of premium notes in force, after deducting all payments thereon and assessments levied	5,632 85
Total assets	$6,023 82

LIABILITIES—(None).

RECEIPTS.

Cash at head office, as per last statement (not extended)	$9 28	
Cash received as first payments, being part payment of premium notes		$234 51
Cash received for interest		14 81
Cash receipts from transfer fees, etc		8 50
Total receipts		$257 82

EXPENDITURE.

Expenses of Management:

Amount paid for statutory assessment or certificate	$7 60
" " printing, stationery and advertising	12 88
" " postage, telegrams and express	1 02
" " salaries, directors' and auditors' fees	241 00
" " other expenses	50
Total expenses of management carried out	$263 00

Miscellaneous:

Cash paid for losses which occurred prior to 1883	$20 00
Total expenditure	$283 00

CURRENCY OF RISKS.

Amount covered by Policies in force 31st December, 1883.

SYSTEM.	Two year or less.	Three years.	Total.
	$ c.	$ c.	$ c.
Mutual	1,000 00	329,994 00	330,994 00

MOVEMENT IN RISKS.

Mutual System.

——	Number.	Amount.
		$ c.
Policies in force 31st December, 1882	185	235,329 00
" new and renewed during 1883	75	96,865 00
Gross number during 1883	260	332,194 00
Less expired and cancelled in 1883	1	1,200 00
Net risks in force 31st December, 1883	259	330,994 00

CLASSIFICATION OF RISKS.

Farm and Non-hazardous.

PREMIUM NOTES OR UNDERTAKINGS

On Policies in force 31st December, 1883.

——	Two year risks, or under.	Three year risks.	Total.
	$ c.	$ c.	$ c.
Amount of face of all premium notes held by Company, and legally liable to assessment	8 65	6,431 76	6,440 41
Amount of all premium notes, after deducting all payments thereon and assessments levied	7 56	5,625 29	5,632 85
Amount of premium notes received during the year 1883	8 65	1,867 18	1,875 83

RECAPITULATION

OF

ASSETS, LIABILITIES, INCOME, AND EXPENDITURE

OF ALL

STRICTLY MUTUAL FIRE INSURANCE COMPANIES.

PURELY MUTUAL COMPANIES.

ASSETS FOR THE YEAR ENDING DECEMBER 31st, 1883.

Name of Company.	Real Estate Cash Value.	Mortgages, Bonds, Debentures and other Securities.	Cash.	Agents' Balances.	Assessments Unpaid of 1883.	Due Bills less than one year Overdue.	Unassessed Premium Note Capital.	Accrued Interest.	All other Assets.	Total Assets.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Bay of Quinte	....	....	758 06	11 78	154 70	....	10,230 98	....	....	11,155 52
Bertie and Willoughby	....	....	8 94	....	....	....	6,727 03	....	....	6,735 97
Blanshard	....	....	390 03	....	193 14	....	14,384 47	....	....	14,967 64
Blenheim	....	....	83 21	....	....	....	29,618 21	....	....	29,701 42
Brant County	....	....	74 02	....	1,259 65	....	61,150 51	....	....	62,484 18
Canadian Millers'	....	....	2,931 34	....	93 75	....	9,428 70	....	....	12,453 79
Culross	....	....	6 73	....	67 26	....	7,220 12	....	....	7,294 11
Dominion Grange, General Branch	....	....	1,355 67	....	....	1,032 27	22,282 92	....	24 15	} 154,095 86
" Grange Branch	....	10,740 00	6,856 20	....	....	2,670 13	108,565 87	428 73	139 92	}
Dorchester	....	....	2,609 30	....	160 54	....	7,644 11	....	....	10,413 95
Dumfries, North, and Waterloo, South	....	....	....	....	744 69	....	155,168 23	....	....	155,912 92
Dunwich	....	....	53 13	....	4 50	....	9,831 81	....	....	9,889 44
Easthope, South	....	....	215 59	....	....	....	56,408 62	....	....	56,624 21
Economical	....	....	16,075 82	30 29	5,064 66	160 07	71,286 70	225 80	....	92,843 34
Eramosa	....	....	2,156 91	....	71 39	....	10,462 15	....	....	12,690 45
Erie	....	....	145 66	22 55	122 80	172 97	11,817 76	....	....	12,281 74
Formosa	....	....	114 07	....	20 32	729 74	7,967 76	....	....	8,831 89
Germania	....	....	3 20	....	....	....	14,142 19	....	7 00	14,152 39
Globe	....	....	2,891 23	33 13	597 97	....	10,819 92	85 22	....	14,427 47
Grand River	....	....	787 49	21 50	....	....	5,557 77	....	3 00	6,369 76
Grey and Bruce	....	....	1,733 65	....	59 80	....	11,070 86	....	....	12,864 31
Guelph	....	....	340 65	....	141 80	....	16,841 52	....	....	17,323 97

Hay			171 65				35,309 92			35,481 57
Hopewell Creek			117 76		211 69	2 00	36,551 41			36,882 86
Howick			985 62		641 20		107,046 86			108,673 68
Huron and Middlesex			110 57	495 63	991 62	1,258 08	25,310 84			28,166 74
Lambton		800 00	2,420 39	6 15		504 99	18,384 44			22,115 97
Lennox and Addington	176 06		329 68		579 40		13,086 23			14,171 37
Lobo			382 77		16 70		6,531 61			6,931 08
London Township			301 91		64 20		8,596 10			8,962 21
McGillivray			1,765 11				7,133 28			8,898 39
McKillop			1,898 65		219 70		43,588 49			45,706 84
Nichol			724 81		700 16	259 94	32,706 18			34,391 09
Nissouri			214 11		1,233 00		50,146 78			51,593 89
Norfolk			625 95	3 20	223 97		8,824 69			9,677 81
Oneida			50 02		129 13		5,874 09			6,053 24
Peel County			559 88		1,158 21		36,899 69			38,617 78
Puslinch			334 16				6,116 67			6,450 83
Saltfleet and Binbrook			109 97		7 29	6 29	4,363 61			4,487 16
Saugeen			548 86		3,329 48		18,767 98			22,646 32
Simcoe			52 50		161 32		2,387 20			2,601 02
Southwold			250 35				11,034 44			11,284 79
Sydenham			693 30	97 16			29,527 66		5 00	30,323 12
Townsend					76 19		12,707 38			12,783 57
Usborne and Hibbert			362 56		135 15		13,450 34			13,948 05
Walpole			237 81	52 66			21,974 60			22,265 07
Waterloo, North			102 21		252 03		96,217 26			96,571 50
Wawanosh			87 96				41,673 26			41,761 22
Wellington	400 00		4 92	200 78	16,375 32		260,730 64		19 81	277,731 47
Westminster			4,950 70				17,588 64			22,539 34
Williams, East				13 60	26 70		4,972 44			5,012 74
Yarmouth			390 97				5,632 85			6,023 82
Total	576 06	11,540 00	58,376 05	988 43	35,289 43	6,796 48	1,641,763 79	739 75	198 88	1,756,268 87

PURELY MUTUAL COMPANIES.

LIABILITIES FOR THE YEAR ENDING 31ST DECEMBER, 1883.

Name of Company.	Losses. Adjusted.	Losses. Resisted.	Losses. Reported but not Adjusted.	Borrowed Money.	Salaries and Directors' Fees.	Small Accounts.	Total Liabilities.	Number of Policies in force.	Amount of Risk.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.		$ c.
Bay of Quinte				263 23	311 25	33 22	607 70	531	630,491 00
Bertie and Willoughby								422	461,635 00
Blanshard									688,920 00
Blenheim								307	620,295 00
Brant County			237 70				237 70	1,998	2,452,471 00
Canadian Millers'			1,958 33				1,958 33	75	128,000 00
Culross								327	401,256 00
Dominion Grange, General Branch								1,184 }	6,855,428 00
" Grange Branch	20 11					43 04	63 15	4,399 }	
Dorchester								580	764,411 00
Dumfries, North, and Waterloo, South			23 00	954 76			977 76	1,526	3,426,175 00
Dunwich			610 00				610 00	485	494,455 00
Easthope								741	1,192,340 00
Economical								1,975	1,729,856 00
Eramosa								169	257,910 00
Erie								520	555,035 00
Formosa								242	266,362 00
Germania								501	609,315 00
Globe	1,400 00				126 40		1,526 40	1,078	715,974 00
Grand River			720 00				720 00	304	389,075 00
Grey and Bruce								591	633,090 00
Guelph								227	409,515 00

Hay	....	....	....	....	....	....	....	1,190	1,437,602 00
Hopewell Creek	....	....	....	209 35	....	....	209 35	672	665,944 00
Howick	....	....	....	....	....	....	....	2,077	2,615,086 00
Huron and Middlesex	3,745 00	....	....	....	....	....	3,745 00	1,990	1,297,074 00
Lambton	....	....	....	....	....	91	91	2,021	2,095,312 00
Lennox and Addington	....	....	....	1,700 00	....	15 00	1,715 00	748	927,145 00
Lobo	....	....	....	....	....	....	....	137	178,345 00
London Township	....	....	....	150 00	....	....	150 00	272	307,817 00
McGillivray	....	....	....	....	....	....	....	294	297,220 00
McKillop	1,100 00	....	....	....	....	....	1,100 00	1,713	2,128,694 00
Nichol	....	....	20 00	....	....	....	20 00	1,570	1,957,947 06
Nissouri	1,300 00	....	....	....	....	....	1,300 00	694	1,075,566 00
Norfolk	....	....	....	750 17	....	....	750 17	832	775,856 00
Oneida	....	....	....	....	....	....	....	318	399,901 00
Peel County	1,500 00	....	....	....	276 50	40 00	1,816 50	1,664	2,200,688 00
Puslinch	....	....	....	....	....	....	....	....	346,150 00
Saltfleet and Binbrook	....	450 00	....	....	....	....	450 00	262	318,645 00
Saugeen	....	....	372 50	2,614 00	....	229 00	3,215 50	1,240	1,062,024 00
Simcoe	....	....	....	....	....	....	....	112	154,378 08
Southwold	....	....	....	....	....	....	....	479	599,275 00
Sydenham	....	....	....	....	....	....	....	1,362	1,518,244 00
Townsend	....	....	....	....	....	....	....	635	842,070 00
Usborne and Hibbert	....	....	....	....	....	....	....	720	918,490 00
Walpole	....	....	....	....	....	....	....	750	1,068,390 00
Waterloo, North	....	....	....	....	....	....	....	1,216	2,027,859 00
Wawanosh	....	....	....	300 00	46 00	18 00	364 00	979	1,102,735 00
Wellington	....	5,047 67	2,000 00	3,804 97	....	....	10,852 64	2,307	2,753,844 00
Westminster	....	....	....	....	....	....	....	825	1,099,290 00
Williams, East	....	....	....	87 27	....	1 81	89 08	258	287,030 00
Yarmouth	....	....	....	....	....	....	....	259	330,994 00
Total	9,065 11	5,497 67	5,941 53	10,834 15	760 15	380 98	32,479 59	....	56,471,654 14

PURELY MUTUAL COMPANIES

INCOME FOR THE YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	First Payments on Premium Notes.	Assessment for 1883.	Arrears of Prior Assessments.	Fees or Surveys.	Licenses, extra Risks and Transfers.	Interest.	Repayment of Money Loaned, Due Bills.	Borrowed Money.	Other Sources.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Bay of Quinte, Agricultural	319 01	612 87			2 95			250 00	34 52	1,219 35
Bertie and Willoughby, Farmers'	157 63			322 50						480 13
Blanshard		1,439 64						350 00		1,789 64
Blenheim, North			1,362 79		37 10				44 75	1,444 64
Brant County		3,315 00	686 60		60 05			1,900 00		5,961 65
Canadian Millers'	607 65	1,452 51	52 50		6 00	81 41				2,200 07
Culross		737 74		220 50						958 24
Dominion Grange, General Branch	2,543 46				65 02	89				14,236 59
" Grange Branch	10,579 01				456 97	591 24				
Dorchester, North and South	347 27	1,126 82	11 00			140 65				1,625 74
Dumfries, North, and Waterloo, South		4,968 10	516 20					2,954 76		8,439 06
Dunwich Farmers'		896 36	21 83	64 50						982 69
Easthope, South, Farmers'		1,955 70		256 00						2,211 70
Economical	3,348 78	3,345 85	4,016 19		63 50	812 80				11,587 12
Eramosa	103 43	140 29	57 01			73 15				373 88
Erie, Farmers'	113 19	548 55	4 95	157 50	20 00		18 26			862 45
Formosa	112 56	295 12	2 40			32 38			10 42	452 88
Germania, Farmers'		40 25		24 00						64 25
Globe	952 23	1,425 53	75 04		11 70		180 00			2,644 50
Grand River	59 50		164 79		5 00	22 95				252 24
Grey and Bruce	137 31	877 71	9 97							1,024 99
Guelph, Township	305 40	800 00				21 58				1,126 98

Hay Township, Farmers'	175 90					29 35			3 00	208 25
Hopewell Creek	117 67	1,201 22			2 00	1 95		600 00	36 00	1,958 84
Howick, Farmers'		5,131 71	251 75					720 00		6,103 46
Huron and Middlesex	9,370 51	4,203 98	354 08		29 69	27 45				13,985 71
Lambton, Farmers'	5,090 41				2 50	168 55			700 00	5,961 46
Lennox and Addington, Grange	17 09	2,889 30	111 60			3 00		1,715 00		4,735 99
Lobo Township	119 71	226 69			1 75	6 92				355 07
London Township, Farmers'	502 13							300 00	3 20	805 33
McGillivray				72 30		80 57	16 38			169 25
McKillop		3,111 95	178 15	125 00	15 15			130 00		3,560 25
Nichol	1,096 90	1,593 41	410 07			49 11			643 15	3,792 64
Nissouri, East and West, and Zorra, West	170 00	417 55			11 50			125 00		724 05
Norfolk, Farmers'	249 87	1,979 58			16 25			700 00		2,945 70
Oneida, Farmers'		2,261 91		62 00	7 50					2,331 41
Peel County of, Farmers'	744 86	3,879 89	248 82		7 00					4,880 57
Puslinch	129 69	12 00		4 00		11 00				156 69
Saltfleet and Binbrook			292 98	337 28		1 72			1 15	633 13
Saugeen		2,068 94	42 34	1,120 64	17 55	10 07		1,264 00	11 05	4,534 59
Simcoe, County		122 04	35 66	14 00						171 70
Southwold, Farmers'		71 64		213 00		11 01				295 65
Sydenham	566 80		44 26	242 50	40 00	11 46				905 02
Townsend, Farmers'	206 68		17 97	116 50						341 15
Usborne and Hibbert		1,024 70	26 77							1,051 47
Walpole, Farmers'	238 51	1,240 29	3 91	256 00	45 60					1,784 31
Waterloo, North, Farmers'		2,250 06	369 86					1,300 00		3,919 92
Wawanosh, West	166 78		21 78	112 00	27 55			300 00	53 50	681 61
Wellington	1,397 29	13,588 18	190 27		52 43	1 59		8,285 41	207 17	23,722 34
Westminster Township	209 84	1,945 54				310 81				2,466 19
Williams, East	179 62	367 77	36 25					1 81		585 45
Yarmouth	234 51			8 50		14 81				257 82
Total	40,671 20	73,566 39	9,617 79	3,728 72	1,004 76	2,516 42	214 64	20,895 98	1,747 91	153,963 81

PURELY MUTUAL COMPANIES.

EXPENDITURE FOR THE YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Losses.	Repayment of Borrowed Money.	Re-insurance.	Refund, Abatement and Returned Premiums.	General Expense Account.	Agents' Commission and Fees.	Interest.	Law Costs.	Statutory Assessments.	All other Expenses.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Bay of Quinte, Agriculture	83 00				410 82				28 84		522 66
Bertie and Willoughby, Farmers	7 00				313 55	180 25			13 00		513 80
Blanshard	650 00	600 00			101 48		38 50		21 21		1,411 19
Blenheim, North	1,216 00				128 58				18 37		1,362 95
Brant County	2,881 25	1,900 00			650 96	334 21	49 32		72 33		5,888 07
Canadian Millers'	1,000 00			1 87	417 86	161 64		12 00	3 85		1,597 22
Culross	667 00				112 65	164 00			13 89		957 54
Dominion Grange, General Branch	1,359 46		20 96	49 35	927 36				25 82		12,434 92
" Grange Branch	4,403 18		79 31	1,394 52	3,978 38		7 14		171 45	17 99	
Dorchester, North and South	448 00				178 30				23 65		649 95
Dumfries, North, and Waterloo, South	3,963 15	3,048 79			1,180 83		140 00		106 29		8,439 06
Dunwich, Farmers	800 00				128 19	33 50		2 00	14 60		978 29
Easthope, South, Farmers	1,717 67				75 70	204 11	9 10		35 19	1 75	2,043 52
Economical	4,506 17		24 75	21 19	2,220 05	236 43			46 93		7,055 52
Eramosa					38 52				7 44		45 96
Erie, Farmers	632 15			8 05	113 21	168 50			17 17		939 08
Formosa	5 00				74 30				9 51		88 81
Germania, Farmers	58 75				86 65				18 35		163 75
Globe	830 93		71 90	22 50	628 14	456 12			19 67		2,029 26
Grand River	19 15			3 00	159 50			2 25	12 79		196 69
Grey and Bruce	80 50			1 50	188 71				20 26		290 97
Guelph Township	1,400 00				81 75				11 93		1,493 68

Hay Township, Farmers	695 66	....	....	....	276 50	....	....	....	42 31	....	1,014 47
Hopewell Creek	1,182 20	400 00	8 45	3 38	227 20	0 75	31 67	....	15 43	15 00	1,884 08
Howick, Farmers	3,231 75	970 00	....	7 68	918 49	61 00	23 63	....	77 89	....	5,290 44
Huron and Middlesex	6,699 89	1,300 00	392 92	300 75	3,123 35	2,229 63	87 31	....	30 94	....	14,164 79
Lambton, Farmers	3,415 05	....	40 71	205 68	585 41	419 00	....	....	57 10	1,000 00	5,722 95
Lennox and Addington, Grange	1,350 00	2,950 00	....	....	370 24	....	151 63	....	30 07	....	4,851 94
Lobo Township	....	....	....	....	71 59	10 50	....	....	3 82	....	85 91
London Township, Farmers	....	300 00	....	....	91 22	59 50	45 42	1 00	6 28	....	503 42
McGillivray	....	111 31	....	....	30 50	....	....	....	9 35	7 40	1,671 21
McKillop	687 50	330 00	....	1 80	509 35	....	62 97	....	67 61	11 98	158 56
Nichol	2,163 00	....	....	13 55	761 83	907 50	....	....	58 25	14 77	3,918 90
Nissouri East and West, and Zorra W.	256 00	125 00	....	....	170 34	....	2 60	....	26 72	....	580 66
Norfolk, Farmers	1,703 72	....	....	....	654 31	72 25	11 47	10 00	14 42	....	2,466 17
Oneida, Farmers	2,300 00	....	....	....	78 50	....	....	....	11 98	....	2,390 48
Peel, County of, Farmers	1,798 50	1,700 00	....	....	503 72	238 50	103 54	....	59 28	....	4,403 54
Puslinch	....	....	....	....	32 14	....	....	....	10 55	....	42 69
Saltfleet and Binbrook	8 00	....	....	5 70	411 52	108 50	....	....	9 65	....	543 37
Saugeen	1,200 35	960 00	77 91	61 81	1,198 14	742 27	160 27	9 17	27 09	48 93	4,485 94
Simcoe County	....	....	....	....	114 72	....	....	....	4 48	....	119 20
Southwold, Farmers	26 00	....	....	....	115 90	142 00	....	....	17 66	....	301 56
Sydenham	28 50	....	....	4 09	339 65	....	....	10 00	42 40	1 00	425 64
Townsend, Farmers	73 69	....	....	....	239 49	....	....	....	24 80	....	337 98
Usborne and Hibbert	29 33	300 00	....	....	348 45	....	21 00	....	26 18	....	724 96
Walpole, Farmers	1,081 80	....	....	....	329 30	10 00	....	....	34 68	145 00	1,600 78
Waterloo North, Farmers	1,998 62	1,300 00	....	....	525 20	....	27 73	....	59 91	....	3,911 46
Wawanosh, West	250 00	....	....	....	189 63	....	21 00	....	27 12	107 30	595 05
Wellington	5,183 33	14,047 53	....	30 65	3,382 30	1,049 52	261 12	48 81	86 94	52 57	24,142 77
Westminster, Township	3,465 98	32 66	....	10 80	440 65	....	....	....	34 59	....	3,984 68
Williams, East	56 77	491 70	....	....	72 74	....	40 01	....	9 19	1 00	671 41
Yarmouth	20 00	....	....	....	255 40	....	....	....	7 60	....	283 00
Total	65,634 00	30,866 99	716 91	2,147 87	28,563 27	7,989 68	1,295 43	95 23	1,646 83	1,424 69	140,380 90

MUTUAL COMPANIES OF ALL CLASSES.

COMPARATIVE SUMMARY OF ASSETS AND PREMIUM NOTES FOR YEAR ENDING 31st DECEMBER, 1883.

Name of Company.	Gross Amount of Risk on Mutual Plan.	Premium Notes —unassessed amount.	Surplus of General Assets over Liabilities.	New Business, taken during year 1883.	Premium Notes taken during year 1883.	Rate per cent. of said Premium Notes to New Business.	Terms of Insurance in Years.
	$ c.	$ c.	$ c.	$ c.	$ c.		
Bay of Quinte	630,491 00	10,230 98	10,547 82	....	....	....	....
Bertie and Willoughby	461,635 00	6,727 03	6,735 97	248,225 00	3,940 98	1·59	3
Blanshard	688,920 00	14,384 47	14,967 64	....	4,508 40	....	5
Blenheim	620,295 00	29,618 21	29,701 42	182,600 00	9,130 00	5·00	5
Brant County	2,452,471 00	61,150 51	62,246 48	400,411 00	12,189 00	3·05	5
Canadian Millers'	128,000 00	9,428 70	10,495 46	40,200 00	4,091 00	10·16	3
Culross	401,256 00	7,220 12	7,294 11	198,805 00	2,960 72	1·50	3
Dominion Grange { General Branch	1,153,963 00	22,282 92	} 154,032 71	{ 392,971 00	10,243 10	2·60	3
Dominion Grange { Grange "	5,701,465 00	108,565 87		1,518,231 00	39,495 39	2·60	1 to 4
Dorchester	764,411 00	7,644 11	10,413 95	293,216 00	753 85	1·00	5
Dumfries, North, and Waterloo South	3,426,175 00	155,168 23	154,935 16	848,115 00	42,405 75	5·00	5
Dunwich	494,455 00	9,831 81	9,279 44	47,855 00	1,190 37	2·50	5
Easthope, South	1,192,340 00	56,408 62	56,624 21	286,310 00	14,315 50	5·00	5
Economical	1,729,856 00	71,286 70	92,843 34	790,200 00	42,204 00	5·34	3
Eramosa	257,910 00	10,462 15	12,690 45	90,950 00	4,122 00	4·57	3
Erie	555,035 00	11,817 76	12,281 74	132,475 00	3,287 40	2·48	5
Formosa	266,362 00	7,967 76	8,831 89	89,280 00	2,787 00	3·12	3
Germania	609,315 00	14,142 19	14,152 39	214,240 00	5,302 50	2·48	5
Globe	715,974 00	10,819 92	12,901 07	227,178 00	5,005 20	2·20	3
Gore District	1,717,160 47	96,853 08	124,770 58	718,644 00	58,215 00	8·10	3
Grand River	389,075 00	5,557 77	5,649 76	209,035 00	3,176 76	1·52	3
Grey and Bruce	633,090 00	11,070 86	12,864 31	244,695 00	5,063 94	2·07	1 to 5
Guelph	409,515 00	16,841 52	17,323 97	164,850 00	7,860 00	4·79	1 to 3

Hand-in-Hand	660,509 00	5,915 74	40,442 54	699,542 00	6,961 27	1·00	
Hay	1,437,602 00	35,309 92	35,481 57	345,130 00	9,693 90	2·80	5
Hopewell Creek	665,914 00	36,551 41	36,673 51	210,014 00	13,499 32	6·40	3
Howick	2,615,086 00	107,046 86	108,673 68	942,571 00	47,128 55	5·00	5
Huron and Middlesex	1,297,074 00	25,310 84	24,421 74	854,039 00	41,160 77	4·82	3
Lambton	2,095,342 00	18,384 44	22,115 06	912,235 00	8,042 08	·88	1 to 3
Lennox and Addington	927,145 00	13,086 23	12,456 37	297,460 00	4,461 78	1·50	3
Lobo	178,345 00	6,531 61	6,931 08	59,524 00	2,380 96	4·00	3
London Township	307,817 00	8,596 10	8,812 21	122,930 00	3,753 68	6·05	5
McGillivray	297,220 00	7,133 28	8,898 39	12,050 00	289 20	2·40	3
McKillop	2,128,694 00	43,588 49	44,606 84	309,375 00	8,118 50	2·62	5
Nichol	1,957,947 06	32,706 18	34,371 09	781,300 00	15,592 00	2·00	3
Nissouri	1,075,566 00	50,146 78	50,293 89	407,040 00	20,352 00	5·00	5
Norfolk	775,856 00	8,824 69	8,927 64	334,201 00	4,999 34	1·50	3
Oneida	399,901 00	5,874 09	6,053 24	89,208 00	1,357 91	1·53	3 to 5
Ontario	1,515,785 04	11,198 76	8,539 00	403,230 00	6,906 16	1·70	1 to 3
Peel County	2,200,688 00	36,899 69	36,801 28	628,345 00	14,064 80	2·24	4
Perth County { Farm Branch	1,913,505 00	20,623 06	} 41,129 98	{ 728,010 00	10,795 29	1·50	3
Perth County { Town "	299,920 00	4,516 76		112,875 00	2,263 60	2·00	3
Puslinch	346,150 00	6,116 67	6,450 83	....	2,647 80	....	3
Saltfleet and Binbrook	318,645 00	4,363 61	4,037 16	149,765 00	2,283 70	1.52	3
Saugeen	1,062,024 00	18,767 98	19,431 32	518,040 00	12,923 96	2·50	3
Simcoe	154,378 08	2,387 20	2,601 02	71,468 75	1,215 09	1·70	1 to 5
Southwold	599,275 00	11,034 44	10,984 79	188,275 00	3,765 50	1·50	5
Sydenham	1,518,244 00	29,527 66	30,323 12	581,355 00	12,050 27	2·06	1 to 5
Townsend	842,070 00	12,707 38	12,783 57	315,170 00	5,153 86	1·64	3
Usborne and Hibbert	918,490 00	13,450 34	13,948 05	370,175 00	8,100 84	2·19	5
Victoria { General Branch	622,176 00	3,670 80	} 29,088 80	{ 16,157 00	272 38	1·70	3
Victoria { Hamilton "	1,281,895 00	30,107 35		351,610 00	11,481 16	3·26	3
Walpole	1,068,390 00	21,974 60	22,265 07	285,210 00	6,278 81	2·20	1 to 5
Waterloo	2,734,072 33	116,196 50	129,192 26	1,095,917 00	69,604 22	6·35	1 to 3
Waterloo, North	2,027,859 00	96,217 26	96,571 50	454,780 00	23,295 00	5·12	5
Wawanosh	1,102,735 00	41,673 26	41,397 22	277,970 00	11,118 80	4·00	5
Wellington	2,753,844 00	260,730 64	266,878 93	1,018,364 00	108,900 85	10·70	3
Westminster	1,099,290 00	17,588 64	22,539 34	269,705 00	5,394 10	2·00	5
Williams, East	287,030 00	4,972 44	4,923 66	95,180 00	1,903 60	2·00	1 to 3
Yarmouth	330,994 00	5,632 85	6,023 82	96,865 00	1,875 83	2.92	3
Total	67,216,676 98	1,930,845 84	2,096,653 44	21,766,571 75	792,334 74	....	....

REGISTER OF INSURANCE COMPANIES, INCLUDING ALL COMPANIES AT DECEMBER 1st, 1884.

Page.	NAME OF COMPANY.	System.	Hea Office.	President.	Post Office.	Secretary.	Post Office.
54	Bay of Quinte Agricultural	Mutual	Picton, Ont.	Archelaus Southard.	Picton, Ont.	W. L. Palmer	Picton, Ont.
56	Bertie and Willoughby Farmers'	"	Ridgeway	Walter E. Ellsworth.	Ridgeway	H. A. Hibbard	Ridgeway.
58	Blanshard	"	Woodham	Thomas Evans		Wm. Johnston	Woodham.
60	Blenheim, North	"	Chesterfield	John Burns	Ratho	Geo. Middlemas	Chesterfield.
62	Brant County	"	Paris	John Miller	Glenmorris	Wm. Turnbull	Paris.
64	Canadian Millers'	"	Hamilton	David Goldie	Ayr	Seneca Jones	Hamilton.
	Caradoc Farmers'*	"	Mount Brydges	Wm. Young	Mount Brydges.	W. E. Sawyer	Mount Brydges.
66	Culross	"	Teeswater	Thos. Allison	Teeswater	Wm. Colvin	Teeswater.
68	Dominion Grange, General Branch	"	Owen Sound	Jesse Trull	Oshawa	R. J. Doyle	Owen Sound.
70	Dominion Grange, Grange Branch.						
73	Dorchester, North and South	"	Harrietsville	Wm. Woods	Crumlin	Cinn. Barr	Harrietsville.
	Downie*	"	Township Hall, Downie	Jos. Ballantyne	Sebrinville	P. Smith	Sebringville.
75	Dumfries, North and Waterloo South	"	Ayr	John D. Moore	Galt	Thomas Marshall	Ayr.
77	Dunwich Farmers'	"	Wallacetown	John Pearse	Tyrconnell	John L. Pearce	Wallacetown.
79	Easthope, South, Farmers'	"	Lot 15, Con. 3 South Easthope	Werner Youngblut	Tavistock	Robt. Reid	Tavistock.
81	Economical	"	Berlin	Hugo Kranz, M. P.	Berlin	W. Olschlager	Berlin.
	Elma Farmers'*	"	Attwood	Wm. Shearer	Listowel	Robert Cleland	Listowel.
84	Eramosa	"	Rockwood	Lazarus Parkinson	Eramosa	Hugh Black	Rockwood.
86	Erie Farmers'*	"	Selkirk	Guy Culver		Jos. W. Holmes	Selkirk.
88	Formosa	"	Formosa	Andrew Waechter	Formosa	Julius Noll	Formosa.
90	Germania	"	L 4, C. 8, Normanby, Moltke	Jno. Roedding	Alsfeldt	George Hopf	Moltke.
92	Globe	"	Brantford	Jno. Strickland	Brantford	Edwin Sims	Brantford.
25	Gore District	Mutual and Cash	Galt	Jas. Young, M. P.P.	Galt	R. J. Strong	Galt.
95	Grand River	Mutual	York	Hy. E. Harrison	York	F. A. Nells	York.
97	Grey and Bruce	"	Hanover	Wm. McNichol	Hanover	Jonathan O'Neill	Hanover.
99	Guelph Township	"	L. 6, C. 1, Div. B, Guelph T'p	Jno. Hobson	Mosborough	Wm. Whitelaw	Guelph.
28	Hand-in-Hand	Mutual and Cash	Toronto	W. H. Howland	Toronto	Hugh Scott	Toronto.
101	Hay Township Farmers'	"	Zurich	Thos. Yearly	Crediton	Henry Eilber	Crediton.
103	Hopewell Creek	"	New Germany	Edward Haltes	New Germany	Jacob H. Leyes	New Germany.
106	Howick Farmers'	"	Gorrie	Jas. Edgar	Gorrie	Thomas F. Miller.	Wroxeter.
108	Huron and Middlesex	"	London	L. C. Leonard	London	John Stevenson	London.
111	Lambton Farmers', East	"	Watford	Jno. Dallas	Thedford	W. G. Willoughby	Walnut.
113	Lennox and Addington Grange	"	Napanee	J. B. Aylesworth	Newburgh	Charles James	Napanee.
115	Lobo Township	"	Coldstream	Alex. Gray		J. T. Wood	London.
117	London Township Farmers'	"	Arva	Edward Roberts	Bryanstone	Ed. Daun	Bryanston.
5	London Life Insurance	St ck	London	Joseph Jeffery	London	John G. Richter	London.
121	McKillop	Mutual	Lot 17, C. 5, T'p McKillop	Thos. E. Hayes	Seaforth	W. J. Shannon	Seaforth.

119	McGillivray	Mutual	West McGillivray	Andrew Robinson	W. McGillivray.	Wm. Fraser	West McGillivray.
11	Mercantile Fire	Stock	Waterloo	J. E. Bowman	St. Jacobs	P. H. Sims	Waterloo.
123	Nicol	Mutual	Fergus	Wm. Taylor	Fergus	John Beattie	Fergus.
125	Nissouri, East & West and Zorra West	"	Kintore	Samuel Trowle	Edina	E. J. Pearson	Kintore.
127	Norfolk Farmers'	"	Simcoe	Oliver P. Mabee		Wm. Roberts	Simcoe.
129	Oneida Farmers'	"	Town Hall, Oneida	Anderson Foster	Decewsville	John Senn	York.
31	Ontario	Mutual and Cash	London	Andrew McCormack	London	P. F. Boyle	London.
	Oxford Farmers'*	Mutual	Embro			R. Murray	Embro.
131	Peel, County of, Farmers'	"	Brampton	Thos. Holtby	Brampton	Luther Cheyne	Brampton.
34	Perth County, Farm Branch	Mutual and Cash	Stratford	Thos. Hyde, M.D.	Stratford	Chas. Packert	Stratford
37	Perth County, Town Branch						
133	Puslinch	Mutual	Aberfoyle	Duncan McFarlane	Aberfoyle	Jas. Scott	Aberfoyle
15	Queen City, Fire	Stock	Toronto	W. H. Howland	Toronto	Thos. Walmsley	Toronto.
135	Saltfleet and Binbrook	Mutual	Elfrida	A. D. Lee	Stoney Creek	J. C. Harris	Tapleytown.
137	Saugeen	"	Mount Forest	James Murdock	Yeovil	Henry L. Drake	Mount Forest.
140	Simcoe County	"	Keenansville	Jas. D. Egan	Keenansville	T. R. Carmichael	Tottenham.
142	Southwold Farmers'	"	Shedden	Donald Fraser		R. N. Stafford	Shedden.
144	Sydenham	"	Annan	Gideon Harkness	Annan	Hugh Read	Annan.
146	Townsend Farmers'	"	Waterford	Isaac G. [illegible]yckoff	Tyrrell	L. N. Collver	Waterford.
148	Usborne and Hibbert	"	Farquhar	Robert Graham	Farquhar	N. J. Clarke	Exeter.
39	Victoria General Branch	Mutual and Cash	Hamilton	Geo. H. Mills	Hamilton	W. D. Booker	Hamilton.
42	" Hamilton do						
150	Walpole Farmers'	Mutual	Jarvis	Charles Simon	Garnet	John Heasman	Jarvis.
44	Waterloo	Mutual and Cash	Waterloo	J. W. Walden, M.D.	Waterloo	C. M. Taylor	Waterloo.
152	Waterloo, North, Farmers'	Mutual	Waterloo	R. G. Gofton		Levi Stauffer	Waterloo.
154	Wawanosh, West	"	St. Helens	Chas. Girvin	Nile	Robert Murray	St. Helens.
156	Wellington	"	Guelph	Fred M. Stone	Guelph	Chas. Davidson	Guelph.
159	Westminster Township	"	Westminster	Richard G. Rose	Glanworth	Henry Anderson	Wilton Grove.
161	Williams, East	"	Nairn	Neil McTaggart	Nairn	Wm. McCallum	Bowood.
163	Yarmouth	"	Yarmouth Centre	John A. Squance	St. Thomas	W. E. Leonard	St. Thomas.

* Newly organized.

FORESTRY REPORT.

1884.

COMPILED AT THE INSTANCE OF THE GOVERNMENT OF ONTARIO,

BY

R. W. PHIPPS, Toronto.

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1885.

To the Honourable A. M. Ross,

Treasurer and Commissioner of Agriculture.

Sir,—In accordance with the instructions of the Ontario Government, I forward my report on Forestry, for the year 1884, of the contents of which the following is a synopsis. The aim has been in this, as in former reports, to disseminate such information as shall tend to check the tendency to too thorough a destruction of the original forest, and aid, where advisable, in the formation of fresh plantations.

Last year's Forestry Report, which was largely circulated throughout Ontario, contained a view of the subject as applicable to the world in general. The present one will be found more directly to concern our own Province. It contains, in the first place, a short recapitulation of the reasons why it is of vital importance that a due proportion of forest land be preserved in every country, followed by statements from parties resident in Ontario, giving the results they have observed occur from the clearing of the forests, and their opinions as to the proper course to be taken. There will next be found descriptions from actual observation of the state of portions of the original forest left standing in settled Ontario, the manner in which it is found possible to preserve them, and the benefits to be obtained by doing so, accompanied by the evidence of numerous correspondents on the same branch of the subject, and concerning the desirability of excluding cattle from portions of such forests. There will also be found many statements, sent from various parts of Ontario, relating the beneficial effects of planting trees as windbreaks on farms, and much from personal observation concerning the same portion of the subject, with the instances in which the best results have been obtained, and descriptions of the soils and methods of cultivation used.

A valuable portion of the work will be found the complete and minute descriptions, from the best practical tree-planters in Ontario and the United States, of the best methods of raising trees from seed, transplanting them into nursery beds, and again into their ultimate positions; with full minutiæ of soils, periods, after cultivation, and kinds of trees best adapted to different earths and aspects. There are also given useful experiences of many individuals in planting young trees taken from the forest, with complete particulars as to kinds, sizes, and methods and times of transplanting.

A section is devoted to information obtained from leading men in such manufactures on the uses of Canadian timber in the workshops and factories of Ontario; the kinds necessary for each description of work, parts of Ontario whence obtained, and possible scarcity, with suggestions as to when some woods should be cut, how sized, and how seasoned. With this will also be found the prices obtainable for hard and soft Canadian timber here.

A chapter will be found containing some descriptions of the most useful trees for timber, and the most beautiful for ornament, with suggestions as to how the latter can be placed with the most agreeable effect.

The last chapter narrates a journey through certain forests of the Upper Ottawa, giving some description of the manner in which the timber trade of Ontario is carried on, with many statements of practical men in reference to the pine forests, the means to be taken to secure their preservation from fire, and the method of continuing them in a reproductive condition.

INTRODUCTION.

"Old trees in their living state are the only things that money cannot command. Rivers leave their beds, run into cities, and traverse mountains for it; obelisks and arches, palaces and temples, amphitheatres and pyramids, rise up like exhalations at its bidding. Even the free spirit of man, the only thing great on earth, crouches and cowers in its presence. It passes away and vanishes before venerable trees."—LANDOR.

In journeying lately through many of the northern and southern States, viewing the great moving panorama of valley and river, plain and mountain, city and forest, which our wonderful system of railway offers to the traveller of to-day, no contrast was more striking, none more pregnant with reflection than the difference between the deforested and the partially wooded farms on the route. Numbers of the former, numbers of the latter, were passed. The first lay, outspread and unrelieved, fields and nothing more, great parallelograms of soil seamed by fences, with a lonely house and barns in some corner, and perhaps a low, spreading orchard which did not improve matters much, for your orchard is but an exaggerated vegetable garden after all. If, here and there, some isolated trees reared their forsaken forms along the fence, they seemed but to apologize for their vanished comrades, and to say, as the wind whistled mournfully through their scanty branches, "Ah! you see what it wants; how dreary it all looks without a few more of us!"

A little further on, and how different another farm would appear! Backed on the hills in rear by a goodly reserve of timbered acres, well fenced and cared for, one could see, rank above rank, the broad, waving expanse of summer foliage; could see the great red-brown trunks of the hickory trees glancing below; could distinguish above the bushy tops of maple and beech, and the spreading masses of the basswood foliage, at that season rich with white blossoms everywhere among its broad green leaves, the whole grove giving comfortable guarantee, if cared for, of fuel and shelter, beams and boards, while the round earth turns. Then, too, the roadside fence, the long side fences as well, east, west, and south faces, would have their row of closely growing trees; a dense extended wall of fragrant cedar, or lightsome larch, or, it may be, a continuous line of clustering maple branch and stem, their multitudinous leaflets bright in the sun of early June. Screened from the wind in some quiet corner, the branches of the orchard rose. However poor the mansion, backed by such surroundings, it looked respectable, the fields rich, the farmer opulent. The comments of the travelling passengers invariably took this direction. "How much better a farm looks for the trees!" "No doubt," says another, "though he must lose some ground." "I don't know, the land is sheltered and will yield more; takes less labour too, there's more mowing and less ploughing; then see what a chance of wood he has. I'd give two thousand dollars more for this than one of those others, anyway. The man who owns a place like this is somebody. This is a residence, sir."

It is, apparently, a matter of general regret that so many young men, who might have attained great success in agriculture, leave the farm for the city. Perhaps, between this habit and the tendency to destroy every tree in the land, we may find some analogy. Where, as in some countries, farmers think more of making their farms beautiful, comfortable and agreeable dwelling-places, where they and their descendants may successively pass honoured and useful lives, than of getting from every rood of soil every dollar which can be wrung from it, there the woodland reservation is cherished as the chief pride of the farm, and foliage everywhere breaks the monotony of the dull earth line. There

> "Their honour'd leaves the green oaks reared,
> And crowned the upland's graceful swell."

Trained in the views which actuated the creator of such a home, the young farmer would probably like it better than the dwellings of the crowded towns. He would be inclined to look forward to remaining there, or to making for himself elsewhere a similar one But if, regardless of graceful and pleasing surroundings, partly moved by the remembrance of our old warfare with the forest, partly by the desire to make the whole surface profitable, we cut down every tree, is it not probable that the rising generation, considering all sacrificed to the idea of utilitarianism and acquisition, may think of turning their steps to the cities, where the first has been said to be popular, and the last supposed to be easy?

But it is now commencing to be understood that the indiscriminate clearing we have practised is injuring growth on the adjacent farms—that the grove aided to produce the fertility of the field. It is also beginning to be found throughout America that the wood lot, for growth of saleable timber alone, is sometimes the most valuable acreage on the farm. It is becoming remunerative, as well as patriotic, to preserve the woodlands. To make the facts in connection with these matters more generally known, is the object of this publication.

FORESTRY REPORT.

DANGERS OF DEFORESTING.

Throughout much of older Ontario the original forest is rapidly passing away. Many farmers of the last generation, when clearing, were satisfied if they left enough wood for their time; and their sons, in numerous instances, have left none at all. Through large sections, but ten per cent. of woodland remains. What follows in such cases is, too often, that the farmer who has yet a few acres of forest standing, being offered a hundred dollars an acre for the timber, thinks that if the wood were gone he could obtain yearly crops from the land, and buy his fuel—and lets the forest go. Then too generally, cattle, instead of being restricted to one portion of a farmer's bush, are allowed the full range of what forest he has remaining. These destroy the undergrowth, and give the wind a clear sweep through the forest below, so that every heavy gale levels more and more of our standing timber; grass gets in; the older trees decay at the top and rot at the roots, and, of course, the undergrowth being destroyed there are no young trees to replace them. The young trees and undergrowth gone, the sun gets leave to strike on the trunks of the older trees, and on the ground near their roots. Both of these are unnatural and injurious to a forest. Some few farmers here and there, aware of these facts, are preserving their woodlands; but, observing that these are but a minority, noticing the present state of our older townships, and remembering that, twenty years back, there seemed standing forest sufficient to render us secure of timber for centuries, it appears certain that, if we change not our method, another score of years will find our farming country largely destitute of woodland.

Judging by the results in other countries, and the partial experience of our own, it will be found that as fast as deforesting becomes general the little springs and rivulets now possessed by many farms will cease to flow, the reason being that the bed of the forest is naturally adapted to receive large quantities of moisture, to retain it for a considerable period, and to allow it to pass away at such times as needed to keep the springs in flow, and thereby greatly to assist the fertility of the adjacent fields.

It will also be then found—as is already being found in our front townships—that the winter's cold will be much more keenly felt, owing to the winds having free sweep over the tree-denuded fields, that it will take much more fuel to warm the houses, and much more food to maintain the cattle—that the cultivation of winter wheat and of clover, owing to the inevitable drifting of the snow over the unsheltered fields, will become less profitable, and that all outdoor work done during the winter will be conducted at greater expense and hardship, both to man and beast.

It will also be the case, should the remains of the original forests, which now dot the country be removed, that the rain and melting snow, no more held for long periods in these natural reservoirs, and flowing off rapidly as they fall or melt, must thereby occasion floods, which will, it is to be feared, annually do much greater damage along the line of our river beds than they do at present—and no little is done, even now.

It is also to be remembered that the forests, in a partially forested country, continually supply water to the atmosphere, which as continually descends in showers; and that it is in spring and summer, when these showers are most needed for the advancement of vegetation, the forests, then masses of leaves, are enabled greatly to aid in procuring such rain.

It may be well to give a paragraph stating the cause of this. The nourishment of a tree is taken in at its roots. It is carried upwards in solution, mingled with a large quantity of water, most of which water having performed its function of carrying the nourishment upwards, is thrown off in vapour through the leaves into the air. The forest thus, in Spring and Summer, is continually sending upwards great quantities of vapour, which, as soon as it finds in the atmosphere another body of vapour-charged and differently heated air, will be precipitated in rain. Now, by the great system of heat and moisture which surrounds the earth and maintains its every function, immense masses of damp and heated air are perpetually passing from the Equator to the Poles. The broad extending columns of cold and damp vapour which. invisible to the eye, rise from every forest, when they meet in sufficient quantity with these, as just remarked, change from invisible vapour to that denser vapour we call a cloud, and that again presently into rain. This process is perpetual, and gives what may be described as rain produced by local causes. Writers differ as to the manner in which the presence of woods acts on the atmosphere, but on this one point they all agree: that the air of the forest is more cool and damp than that of the open country, that so also will be that above it, and, of course, whenever a saturated and warmer current passes over, it must produce precipitation, which will fall in rain.

Let us for a moment take time here to understand why two currents of air, more or less charged with vapour of water, coming into contact, each heated to different degrees, produce rain. It occurs in this way:—

The Production of Rain.

To quote from an excellent author, "The water is not motionless either in the depths of the oceanic basin, in the solid ice, or in the atmosphere. Thanks to the always active power of the sun, to the aerial currents, the water rises vertically from the depths of the sea to its surface, becomes vaporized at all temperatures, ascends in the shape of invisible vapour through the ocean of the air, becomes condensed into clouds, travels across continents, falls again in the shape of rain, filters through the surface of the soil, passes along the strata of impermeable clay, springs up as a source or fountain head, descends by the streamlet into the river, and falls from the river back into the sea again."

The vapour of water, as is here remarked, rises from the ocean, mingles with the dilating and arising air, and in immense quantities ascends into the higher regions of the atmosphere.

Will my readers now for a moment study this little table. It is but nine lines :—

At 14 deg. a cubic foot of air is saturated with water by the weight of 1 grain.

30	"	"	"	"	2 grains.
41	"	"	"	"	3 "
49	"	"	"	"	4 "
56	"	"	"	"	5 "
66	"	"	"	"	7 "
80	"	"	"	"	11 "
88	"	"	"	"	14 "
100	"	"	"	"	20 "

When we thoroughly comprehend the effect of the fact stated in this table, we understand why two clouds or two currents of air more or less saturated with vapour of water, coming into contact at certain temperatures, produce rain. It occurs in the following manner :—

We will notice that a foot of air at a temperature of one hundred (the heat of a very hot day indeed) will hold twenty grains of water. If it were only at thirty degrees it would hold but two grains of water. Now let us suppose a mass of a thousand cubic feet of air at 100 degrees, and holding twenty thousand grains of water. Well, a cold current of air comes along, meets our cubic mass, and cools it down to thirty degrees. It can only hold two thousand grains now ; the cold current has served an ejectment on the odd eighteen thousand grains, and they must fall out. They would fall out first into cloud, then into rain, and that is a rough sketch of the way in which rain is produced.

But we will go more slowly, and first show how a cloud is formed. Here are the words of an excellent writer on the subject, so concisely put and so clearly, that we cannot do better than copy them :—

" The *invisible* vapour of water spread through the atmosphere becomes *visible* when a decline in the temperature or an addition of moisture brings it to the point of saturation. Suppose, for instance, that a certain quantity of air at eighty-six degrees contains 478 grains of vapour of water, this air will be quite transparent. If by some cause or other this air descends to seventy-seven degrees, or receives an accession of moisture (either will do) it will become opaque. If it is done by the lowering of the temperature, a diminution of nine degrees of heat will cause 108 grains of vapour of water to be condensed and to become visible. This is what a cloud really is : vapour of water which the air, being saturated, is no longer able to absorb, and which becomes separated from it by passing into the state of small vesicles."

This is the way clouds form, and, as you will see by the following, it is but by a continuation of the same process they are precipitated in rain. If the cold current which has produced them from the warmer atmosphere continue to exert its condensing force, or if a more saturated current arrive, the process goes on, and now becomes molecular ; that is, the larger particles rapidly come together in still larger ones, the force of gravitation begins to be felt, and the whole process is described by that great meteorologist Herschel, as follows :—

" In whatever part of a cloud the original ascensional movement of the vapour ceases, the elementary globules of which it consists, being abandoned to the action of gravity, begin to fall. By the theory of the resistance of fluids, the velocity of descent in air of a given density is as the square root of the diameter of the globule. The larger globules, therefore, fall fastest, and if (as must happen) they overtake the slower ones, they incorporate, and the diameter being thereby increased, the descent grows more rapid and the encounters more frequent, till at length the globule emerges from the lower surface of the cloud, at the vapour plane, as a drop of rain, the size of the drop depending on the thickness of the cloud-stratum and its density."

Now, if my readers have but followed these learned gentlemen through their technicalities they have grasped this plain fact:—Rain is the precipitation from the air of moisture which was more than it could, at the degree of heat to which contact with a colder stratum of air had reduced it, hold in solution. And to show how elevations, especially if wood-crowned, produce rain, any one can also easily see that if a saturated current of air arrive at a mountain chain or other height, and have to rise into the colder atmosphere above, getting colder one degree, according to the season, as they rise 200, 250 or 330 feet, as the air is the colder the higher we ascend, it must in consequence part with, as rain, much of the moisture it carries. Let us remember, too, that rain differs from cloud only in being formed of drops produced by the mutual attraction of lesser drops, which rapidly fall by force of gravitation to the earth instead of floating, as the smaller particles of moisture composing the cloud had been, in the air.

I have published this last page previously, but as it gives a very clear definition of the method of producing rain, I give it for the benefit of my present readers.

It would be well here, perhaps, to recapitulate something of the great and chief cause of rain and wind, of calm and storm. The rays of the sun, the centre of our system, beating continually down with fervid force on the great central line of the earth—the Equator, and on the whole great Equatorial belt, thousands of miles in width, hundreds of thousands of square miles in area, cause to arise, in constant vapour, from the great ocean surface rolling within that immense space, a mass of moisture and of mingled air, wide as the broad extended waters from whence it comes. Everywhere there it is rising to the skies, it flows off, north and south to the poles, and is the warm and moist Equatorial current. On the way it parts with much moisture, at the poles with much, and comes back from the poles to the Equator, now called the Polar Current, cold and dry, till at the Equator it rushes again into the vacuum formed by the rising Equatorial column of air and moisture, rises aloft once more and seeks the poles again. These, from the Equator to the Pole and from the Pole to the Equator again, are the two chief winds in the world. The rest are but modifications of these. These two do not continue in unmixed career—they rise and fall—they meet and separate; immediately above us on one day, may be the warm and moisture-saturated current coming from the Equator, another day, and it may be replaced by a colder and dryer atmosphere passing southward from the Poles. This forms the great general system of distribution of moisture over the earth, as the meeting and intermixture of these vast moving masses of differently heated air and vapour must produce precipitation and rain. All over the earth, by this system, rain falls. It is found, however, that local circumstances greatly modify its action. A sandy desert is said to drive away rain, that is, the refraction from its surface prevents rain from being formed near it. A forest is said to attract rain, that is, as stated before, it assists, by the vapour ascending, in its formation.

Of all the local causes which tend to produce rain, forests are by far the most beneficial to the cultivator; for the great but invisible columns of cold and moist air which arise from them are sent upwards when rain is most beneficial to the farmer—in the Spring and Summer months—in Spring, because the forest bed is cold and wet with the remains of snow and hoarded rain, and yet evaporating rapidly—in Summer, because every full formed leaf is transpiring vapour from its thousand pores. "If," says a scientific writer, "the vaporous clouds arising from forests were coloured, the size of the forest below would be as nothing to the bulk-expanding columns which would be visible above."

Another cause of great injury to a deforested country is, most undoubtedly, the great amount of fertile soil carried away yearly by the rapid passage of bodies of water across the surface. This is called, scientifically, aqueous denudation, and is the immediate result of doing away with too much of the forest. The unrestrained waters continually carry the valuable constituents of the soil—the chief riches of the country—to the rivers, the rivers to the lakes, the lakes to the ocean. Wherever the hand of man, after clearing as much of the woodland as should properly be changed to fields, and devoted to agriculture, has greedily stretched further still, and recklessly dislodged the last barriers of nature against denudation, the remaining and interspersing woods, it has gathered the forbidden overplus of the manna, which will assuredly turn to death and corruption in the store. The strength of the soil is the life of the nation ; if the former be impoverished the latter must decay. We may build our tower and fence our vineyard, but if the woods go no fence will keep our property ; it also assuredly goes, though almost invisibly. With each torrent of rain, as the waters flow rapidly over the land, a last column of our richest possessions moves to the sea. It is shallow, but it is a thousand miles broad, and next week goes another, and another. This is one chief reason why many fields, once rich, now need manure ; and why many lands, once gardens, are now sandy wastes past all manuring.

From these reasons, it has been found in many countries that deforesting has been followed, sooner or later, by barrenness. In Spain, in France, in Russia, in Germany, in all the bordering countries of the Mediterranean, of which the richness and fertility formerly gave them many millions of population—gave them crowded harbours, vast fortified cities, great fleets and immense armies, the same process has occurred. Let us mark for a moment the difference of race. The Caucasian mind long since saw the process and its results, grasped the problem and solved it. Much of Europe, France and Germany especially, have for centuries cared for their forests ; most of Europe is now caring for them, and where it is done fertility remains. It is not so with the Asian shores, nor with the African regions once celebrated in history. In countries where, at the command of Xerxes, great navies were built, long travel would be necessary to find keel, ribs and planking for half a dozen galleys. The forests are gone, and great areas of cultivable land which lying adjacent, fed with moisture and preserved in fertility by the proximity of these forests, sent him many an army, are sterile wastes which scarce could find a regiment for the field. A remarkable instance—and in the country of which alone we possess sacred historical records—exists in Palestine. When it was rich and fertile, flowing with milk and honey, its hillsides and its mountains were forest lands. The day of the cedars of

Lebanon was the day of the grapes of Eschol. The valleys had been cultivated, the hills left in forest. But now all is changed. The Jordan, then a noble river, is now a muddy and shallow stream; the fertile valleys are wastes; the tree-clad hills are bare and rocky eminences. All over the world are similar instances, and of much later day, and accomplished in much shorter time.

I do not know that, of all in Europe and America who have noticed these facts, any have discovered the *modus operandi*—the method of operation of the injury done. It is hard to calculate on causes which are under earth, hidden from our view by gravel bed and sandy strata,—by rock and boulder and clayey subsoil,—and alluvial earth covering over all. Let us try and reason it out by observing that which we do know. See yonder rose-tree in the flower-pot. If the flower-pot have no opening below, and we give it a generous watering, the overplus moisture cannot leave the soil, the earth, over-saturated with wet, remains so, the rose-tree flourishes no more. Or let there be an opening, and forget to water; the dried-up earth refuses to nourish the exhausted roots, the rose-tree dies. But allow the means of escape below, and nourish with occasional and well-timed waterings above, and your rose-tree, it may well be, will flourish in fervid life, a pyramid inverted of glossy green with bud and flower among.

Let us compare this with the fields. While the forests remain in due amount, diminutive underground watercourses run everywhere beneath them. If you have ever dug a railroad cutting through wood and field, you will find under the wood many a spring. Under the field, unless you dig deeply, you will find but very few. And you will find it general that while the country is forested you will get well water at but a few feet in depth; when it is partially cleared, you must go deeper; when fully cleared, very deep indeed.

The country partially cleared may be, I should say, likened to the occasionally watered and well-tended flower-pot. The fertilizing showers of spring and summer will, from the proximity of the trees, be frequent and nourishing. The overplus moisture will at once be carried away by the underground channels, still for that purpose existing sufficiently near the surface: vegetation will flourish, and the fields yield a generous return. As with the well-tended flower-pot, the regular succession of moisture and heat has been bestowed.

But when a country is almost deforested, the original underground channels near the surface little used, must of necessity largely close. Rain, then falling, will have a great and still increasing tendency to flow away over the surface, carrying with it in solution the richest part of the soil. Added to this, these rains will be heavy and flood-producing. The gentle and frequent spring and summer showers, which the woods should attract, will seldom be there. The land will not yield so rich nor so easily produced a return. To farm will be a labour more and more slavish, for the farmer will be working against Nature. He will have interrupted the course of the means by w ich she aids him in his toil.

In Ontario we have made advances already too rapid in this direction. Let us consider the best course in which now to proceed. On the settlement of Ontario, the first object necessarily was the clearance of the woods. Until this was done, no land could be obtained for farming purposes; but so much has now been cleared, that it is time to look around and consider carefully our future course. In some districts little over ten per cent. is left, in many but twenty, while others far from the frontier have of course much more. It is everywhere allowed that, in view of the only too probable approaching scarcity of wood for fuel, building, lumber and manufacturing purposes, it would have been well if, at the first settlement of the country, certain tracts or portions had been set apart for timber and left therein for the general benefit. This cannot now, except in counties remote from the frontier, be done. The country is largely in the hands of those who have purchased it from Government, and the reserves of timber, such as yet remain in the settled portions, are principally in the hands of private owners. Let us observe whether it would not be for the benefit of these private owners to maintain a portion in forest.

All through settled Ontario, among the woodlands we still possess, are still found red oak, hard maple, rock elm, birch, cherry, basswood, ash, soft elm, and other valuable woods. Many of these are not obtainable in anything like such quantity or quality, if we go much farther back; much of them, however, still remain in older Ontario and in the hands of private owners. It is these which we draw on year after year for a number of valuable industries hereafter to be mentioned. It is now time, while we still have these reserves, to think whether there be no plan by which they can be made continual.

Although, in many localities in Ontario, are still procurable most of the valuable woods which are used in our manufactures (for one, in the making of all those descriptions of agricultural implements, which are now so indispensable to the agriculturist), yet these are going so rapidly that a leading manufacturer says, "All kinds of hardwood are becoming scarce, and in a very few years, at the present rate of consumption, will have to be obtained from without the Province."

It must be noticed that these are not becoming scarce at all so much in consequence of their use by the manufacturers, but as a result of the steady clearing which has for many years been going on throughout Ontario. As, in a thousand localities forests have been cleared away, which, if left standing till now, would have sold for ten times the profit of all the crops the land has ever produced; so in many places to-day farmers in the process of clearing, are burning up timber which would, in a few years, have become very valuable, which is, in fact, valuable now if it could be brought to the localities where needed. Indeed, in some cases, it is valuable where it stands, but its owners are not aware of the demand for it.

The process of clearing commences in what are called the back-woods. Wood, except, indeed, it may be pine, which the lumbermen have the right to carry off, is of little value there. All the rest is chopped down, cut into fourteen-foot lengths, if not very heavy timber, hauled together by oxen, piled in heaps and burnt. About half the land is cleared, and the settler looking around him, still seeing forests everywhere, thinks that whatever happens wood will never be scarce in that part. This is as yet in the backwoods, but soon the name is no longer applicable. The farmer on a two-hundred-acre lot may perhaps have saved forty acres of bush, but he is not likely to have more. It is by this time no longer the backwoods, they are far away, and the same process is going on in them; but here in the townships we commenced to describe, the forty acres or so left rapidly diminish ; the lands are sold and must be cleared ; sons are left portions ; they are wooded, and before they can be used they must be deforested. Wood becomes scarce ; forests through which cattle are allowed to range, blow down ; the farmer thinks he had better clear them up and have them in crop ; and, by degrees, the township is as the front townships, with its woodland diminished to ten per cent. of the acreage, and scattered here and there in uncared for and irregular portions. Fuel now becomes scarce ; the farmer is offered a high price per acre to allow the cord-wood to be taken from off the portion he still retains uncleared ; he accepts it ; the remaining forests diminish more and more ; the country becomes bleak, and is on the way to become unfertile.

Throughout Europe it is found much more valuable to allow a certain portion of forest to remain as forest. The oak, the beech, the ash, the pine remain there, growing into value. The owner of the woodland can sell every year a number of valuable trees without injuring his forest land. The forest remains as forest, the trees which are taken away merely leave room for other and younger trees to fill their places ; and, without the trouble of ploughing, harrowing, sowing, manuring, or summer fallowing, the portion of forest he retains yields him every year a considerable income.

I would wish now to suggest to the farmers of Ontario a method whereby they themselves may in future obtain such an income with as little labour. As I have pointed out, timber of all sorts is likely soon to become scarce in Ontario. If our farmers, say on 200 acre lots, can preserve twenty to forty acres of woodland, and on 100 acre lots half that amount, it would give them the opportunity of leaving a certain portion of bush in which their cattle might wander, and yet allow them to retain a tolerable reserve for purely forest purposes. These portions of original forest, or even a part of them, if secured for that purpose, would act as nurseries of timber trees, far more economic and efficient than any field-planting can secure us. In such portions of these as are fenced against the inroads of cattle, the forest trees—pine, maple, ash and elm—in fact, all the most valuable sorts, will seed themselves and form a rich undergrowth, which preserves the older forest above in more ways than one—it keeps the original forest soil about the roots of the larger trees, thereby strengthening their hold on the ground ; it closes up with a mass of verdure the lower interstices of the forest, thus preventing the otherwise unimpeded rush of the winds ; thirdly, towards the forest edge it produces trees grown in the sunlight which, firmly rooted as their nature is when grown in that position, stand as a barrier to defend the rest. Any portion, therefore, of the original forest well fenced will, in all likelihood, reproduce itself continually in its former strength, and shortly be in a position to furnish yearly to the husbandman, from the full-grown trees, a constant supply of excellent timber ; while the benefits of continuing throughout the Province many such patches of forest, dense in underwood and retentive of moisture, can hardly be overestimated.

It may be remarked that the process is as follows : Where an undergrowth is allowed to flourish, cattle being excluded, grass does not overspread the ground, and the seeds, falling from the trees, continually take root in the rich and moist forest soil. The attempt of the strongest saplings to overtop the undergrowth projects them upwards, they overtop it, and, by this time young trees of perhaps fifteen feet in height, their next effort is to rise to the sunlight above the forest shade which embowers all. Thus we obtain, in a very few years, a high straight slender trunk which, once reaching the light above the forest roof, soon thickens into valuable timber. This is the forcing process of the forest, ready, if we will but allow it, to give us a continuous succession of valuable trees, without the labour of sowing, planting or cultivating.

I know a block of forest of twenty acres which has yielded for the past twenty years about twenty-five cords of wood annually. (The same area of woodland, well cared for, and pruned, would yield much more.) The undergrowth has never been disturbed by cattle, and the young trees consequently have always grown up ready to replace the others. There are plenty of young trees there now—tall straight slender shafts sixty feet in height, and but six or seven inches through; while so many trees of good size are ready for the axe, that it is evident that the forest will continue, at that rate of cutting, to reproduce itself for ever. Throughout all the older settled portions of Ontario, and throughout the newer sections as fast as they are to an equal extent cleared, such fuel will soon be worth $3.50 per cord besides the cost of cutting. If we also remember the fact that for at least one-half of this very cord-wood there is now springing up a demand as sawed timber, which of course commands a much higher price, it will be seen that such a fifteen acre block, cattle being carefully excluded, and some care taken in cutting not to damage the surrounding trees, will be shortly the most valuable part of the farm; it would yield a probable rental for cordwood and square timber of about $10 per acre; and it should always be remembered that, while it is kept in good bush, the owner can always change the timber to a more valuable description. He can plant within its borders, among its own natural undergrowth, thousands of nuts and seeds of the white oak, the hickory, the walnut or any other kind he may fancy, and may, by such means, double the value of his timber reserve. Though the farmer may never himself live to see these trees of age to cut, yet he himself may obtain full value for his labour. Walnuts planted to-day in the forest ground should give, in twenty years, walnut timber fit for numerous purposes—in thirty, large trees fit for many a portion of side-board, table or inlaid cabinet. Other trees will be almost equally valuable. Say the farmer wishes, ten years from to-day, to sell his farm. The purchaser, let us suppose, is a young man. He may well say, "I am likely to live twenty years; I shall then be only in the prime of life, and by that time there will be timber here from which I can cull for all succeeding years as much as will readily sell for a large sum annually, or if I should choose to cut the whole there will be some thousands of dollars' worth ready for the axe." Of course, then, he will give far more to the farmer who planted the trees than if the work had never been performed. The farmer has not then lost his labour, although he may never see the trees mature.

It would be, undoubtedly, well that farmers would determine each to maintain a reserve of forest of this nature on their land. When we consider that the time is very shortly coming—nay, in many sections, is now—when they can gain yearly a considerable sum by the sale of full grown trees, for firewood and sawed timber—considering that in a short time fuel will be scarce in most parts of Ontario, it would seem that the wood-lot should not be diminished on any consideration. This feeling is not, however, as genera as it should be. Lately, I was travelling about thirty miles in one of our frontier counties, and came to only one good hard-wood bush on the route. It was about fifteen acres, and the owner being offered $1,500 for leave to cut the timber for cordwood, was about to let it go. People said that it was a pity he ever cleared the farm, for the uncleared piece was proving more profitable than all the rest. On being asked whether it would not be better to keep it standing, as it seemed in thorough reproductive condition—cattle having been always excluded—and yearly sell wood from it, the answer was "Nobody seems to do that about here." Nobody did seem to, in fact, for the country was getting as bare as the Steppes of Russia, and the winter wind, passing over the far extended snowy surface, seemed to blow through one.

In all efforts, however, made to keep a piece of the original forest standing and in good condition, the prime necessity is the exclusion of cattle. To give the trees health and vigour, the ground must be the original forest soil, dotted with infant trees just rising from the ground, with taller undergrowth of long and upright saplings, emulous of being the future tree, with large trees fit to cut, and with younger ones nearly ready to replace them. In such a bush-lot the grass cannot get in and overspread the ground, for it is shaded by the undergrowth. Next, as previously stated, a most important consideration, the young second growth trees, rising up around the edge of the bush, will never blow down, and will, as they increase in height, keep the wind from all the rest. The whole of the forest trees, too, young and old, grow much more vigorously when the undergrowth and young and springing covering of plants around and among their roots, which is their natural mulching, is not destroyed. A block of forest so treated, and with a little assistance in case of unforeseen accidents, will reproduce itself for ever.

Throughout settled Ontario any plan of forest preservation needs the farmer's co-operation, for he holds the forest remainder. In all directions that remainder decreases. The axe, which once thinned, now extirpates. It is full time that, on ten or twenty acres of every farm, the chopper should stay his hand. But he must do more—he must exclude his beasts; where hoof and horn range down go undergrowth and sapling—in a moment, before their placidly devouring jaws, vanishes the umbrageous wealth of the flexile branch and delicately-pencilled leaf—gone is the promise of hardy timber yet to come. The little youngling elm, his green and double leaf fresh springing from the soil—the infant cotyledon of the future oak—the maple bud and the sprouting ash are no more; and from tree to tree is nothing but trampled leaves. The forest ground dries and shrinks; far above, the giant masses of the upper foliage alone oppose the rushing wind; the undergrowth below—the natural barrier—is gone; the air sweeps through; some stormy morning the outward ranks are prone—the beech and the great oaks lie across; with the next tempest more will follow. Our enemies are those of our own stables; and our farmers may say, "With the jaw-bone of an ox, heaps upon heaps, have I slain a thousand trees."

On every farm some forest is needed to break the winter winds. It is needed to keep level the drifting snow. It is needed for pleasure; he who has near his house a forest walk of his own, where he may for a space enjoy the health-giving atmosphere, and

> "Under the shade of melancholy boughs
> Lose and neglect the creeping hours of time,"

has opportunities many would give much for. It is needed to aid in procuring rain in due season. It is needed as a store-house of timber—soon likely to be full scarce throughout the land.

We found here the wood—the water—the fertile soil. It is certain that the deforesting of a country in process of time does more than withdraw the one; it greatly impairs the others, so much that the land may not then support one-tenth of those it now could maintain. Proprietors should remember that no one can possess a title to destroy the usefulness of the soil, lest, "the land cry out against him, and the furrows thereof likewise complain." The vast concourse of humanity continually emerges from the unknown past; it travels toilsomely by; it passes into the clouds of the future. Be sure that there we shall meet with stern questioners; nor will those pass unchallenged who have, to serve their temporary greed, rendered painful, sterile and barren, the path of generations yet to follow.

PRESERVATION OF EXISTING PORTIONS OF FOREST.

Of all branches of Canadian forestry, one of the most important is that which treats of the advisability of preserving some portion of those fragments of the original forest yet standing on our farms. When we consider in how many parts, both of Europe and America, the land owners, finding by sad experience the evils of a deforested country—finding that the farm yields not so rich—not so easily obtained—a return to the husbandman—taught also some sharp lessons by scarcity of timber formerly easily to be had—are busy in replanting, not by dozens or by hundreds, but by thousands and millions of trees, and observing, as we are compelled to observe, that throughout most of Ontario the same process will soon be necessary, it is natural to look around us, and consider whether we are not in a position to do something better.

All through settled Ontario, there are yet many valuable portions of woodland, here and there. One farmer will have ten, another twenty, a third forty, acres of forest. Where cattle have been excluded from these, it will be found that there is plenty of undergrowth, young saplings, half-grown trees, trees nearly matured—plenty of materials, in fact, for the continuous replacement of the forest. In such a reservation, too, it will be found that the original soil of the forest, a thick coating of rotten leaves overlying a mass of vegetable mould, is still there. On the outsides, too, it will be found, if matters have been rightly managed, that the undergrowth, as fast as it arose to tree size, has preserved its branches nearly down to the ground. There will be found here the three things necessary to perpetuate a forest, namely, the drying winds cannot blow through; the bark of the older trees is protected from the sun; the forest ground is kept moist, rich, open for the reception of tree seeds, and in a situation to nourish and cover the roots. Where we find matters so, all that can be said is, continue the treatment, cut out carefully, year by year, the larger trees as you need them, and the diseased as you observe them, and nature will always keep you a forest. Here, too, if you like to assist nature with better seeds than the wind might bring, you can sow or can plant whatever you like, and the forcing process of the forest, each young tree continually striving to attain to the forest roof where alone its branches can receive light and air and put forth leaves—will give you tall and straight timber more quickly than you can obtain it by any other method. White oaks, ash, walnut, hickory, chestnut—in fact, any trees desired can be easily grown in such a wood.

But one of these small forests, to which cattle are allowed free entrance, will be found in a very different state. Unless they are few in number compared with the size of the forest, or that they have access to such rich pasturage as to deprive them of the inclination to destroy the young trees, they will certainly kill the undergrowth, unless it be evergreen, which is seldom the case. (Here it may be remarked that a hardwood forest might be maintained in good condition where cattle must be allowed, by encouraging or even planting an evergreen undergrowth—pine, hemlock and cedar; these would protect the soil and the larger trees, which would then grow to maturity, and your hardwood forest would in time become an evergreen glade.) But where the undergrowth is deciduous, and cattle destroy it, no young trees can rise, the forest becomes thin, the sun beats on the bark of the larger trees, (a thing the forest tree has not the bark to bear; the field tree bark is dense; that of the shaded forest tree tender); the young trees gone, wind and sun dry the ground, it becomes carpeted with grass, the great trees begin to die at the top, the decay of the older forest is only a question of time and there will be no young one to replace it.

In many of these reservations, there is yet much good timber, and if care were taken there might be a perpetual succession of such—even now, as remarked, there is much good red and white beech, black and white ash, elm, cherry, oak, maple, and many another tree. How valuable these are likely soon to become, the statements in other pages from practical men, engaged in the use of these woods, inform us. What I should like therefore to suggest is, that where any reasonable amount of forest, say ten or twenty acres, exists on a farm, it is great waste to allow cattle its complete range. Let them have a few acres for shade, but for the rest, if left to grow timber—above all, if assisted to grow timber, it may, in a few years yield without labour, a return more valuable than any other portion of the farm. To illustrate this, I may remark that in another page will be found a statement by Mr. Culbertson, near Chicago, whose ten acres of woodland, planted by himself, he now considers more valuable than the other 260 acres of his farm.

Most of our existing patches of forest could well be preserved. A little attention to fencing, planting or sowing would shortly convert many a decayed and apparently dying portion of forest into thriving woodland. Planting forests, where necessary, is an excellent thing, but time is needed to obtain the result. In preserving an existing forest, on the contrary, much may be done in a very short time. The three rules are, encourage the undergrowth, exclude the sun, exclude the wind.

We will now give a few pages to statements from different parts of Ontario, describing the results which have occurred from the general clearing of the forests throughout the Province.

Mr. M. J. Fisher, writing from Maxville, Glengarry, Ont., says: "Though our lands here are but partially cleared to what they will be at no very distant time, the stretches of bleak clearing without breakage seem too large, to the great discomfort of the grazing cattle, who make for the sheltered parts in the cold winds of spring and fall, as well as during the scorching summer suns. Another fact worth noting is that the only parties known to raise fall wheat with success—or with whom success is the standing rule—are such as have their fields surrounded, wholly or partly, by wooded lands, not their own, still uncleared. leaving the snow of nature to do its sheltering office.

Rev. W. H. Moss, Milverton, Perth, writes:—"One thing seems clear—the forests are fast disappearing. Many farms to the south have been stripped of almost every tree

—the result of fires. The lumberman is also very busy in these parts, sawing up pine, cherry, ash, hemlock, etc., so that in a very few years all lumbering must cease here for lack of material. Clearing has also been carried too far in many cases. The result is that, although this is comparatively a new country, wood is getting scarce, and in winter we have dreadful drifts in most of our roads."

Mr. A. Drummond, Howick, Huron, writes:—"As to the change in rainfall (excepting the present) the seasons have been much drier of late, than they were for a number of years after we had settled in the woods here, some 25 or 26 years ago. The drought seems to be more penetrating now that the woods are away. Creeks in this part get very low, and those fed from swamps often dry up altogether."

Mr. R. W. McLaren, Plympton, Lambton, writes:—"The woods in this neighbourhood are very thin as a general thing. About twelve years ago the fire went through them and destroyed a great deal of timber. Creeks stop running very soon after drought sets in. I do not think the clearing of the forests has actually lessened the rainfall, but it goes more to extremes now."

Mr. Philip Kelly, New Durham, Oxford, writes:—"The first settlers came into this neighbourhood about fifty years ago. Since that time the woods have been cut down very rapidly, till now the neighbours, as a rule, have no more wood than they need for their own use, and a few have none at all. I think about 85 per cent. of the land in this neighbourhood is cleared. Springs and creeks here are drying up; that, however, is to be traced to two causes; the first being the cutting down of the forests, the other, underground draining."

Mr. G. Fortune, Turnberry, Huron, writes:—"I think, including swamps, there must still be one-third of the land in Turnberry uncleared; and I do not know that we have felt any inconvenience from the amount of clearance as yet; but there is no doubt that we will soon feel the want of firewood, as also of lumber for building purposes. I do not know of any difference here in the amount of rainfall, but the small creeks dry up a great deal sooner in the spring, than they did twenty-five years ago. Our rivers, too, get far lower in summer; where there was at that time, in some places, plenty of water to drive a mill, they have now either to put in steam or allow their mills to lie idle during the summer."

Mr. James McCool, Londesborough, Huron, writes:—"In this part the forest is becoming rapidly cleared; in a few years some farmers will have neither firewood nor building timber. In regard to creeks, I may say they have mostly all dried away since the land has been cleared, even those which had been considered to be never failing."

Mr. James Johnstone, Carrick, Bruce, writes:—"As to change in the rainfall, I am of opinion that there is not much change here yet, but there is quite a change in manner of rainfall getting into the creeks and rivers. Formerly, when this country was covered with forests, the rain very gradually soaked its way into the ground and thus slowly raised the springs, creeks and rivers. Now, after rain, the creeks receive it much sooner, as a great deal of the water does not penetrate the soil at all, but flows over the surface and gets at once to the creeks, and raises them sometimes very suddenly. I think that the normal state of our creeks on this account is changed. And for the same reason we have more floods and also more times of low water."

Mr. John Bishop, Palmyra, Elgin, says:—"The creeks dry up much sooner than they used to, and some that held water the year round, are now dry a good part of the summer."

Mr. Edward Haltes, New Germany, Waterloo, says:—"With regard to rainfall, there is a change since the bush is going down, and the old swamps cleared up and drained for pasture land. Taking ten years, I noticed that six out of the ten, it is rather too dry for pasture or spring crops on light land."

Mr. William Elliot, Parkhill, Middlesex, writes:—"This neighbourhood is almost entirely cleared of forest, farmers reserving only what is necessary for firewood. The result is visible in the drying up of small streams in summer, and the injury done to crops by cold frosty winds. I think the absence of shelter for growing crops the most injurious consequence of the removal of the original forest."

Mr. A. D. Ferrier, Fergus, Wellington, writes:—"This neighbourhood is getting to be very bare of timber, and we feel the wind very much. Firewood is very dear and scarce."

Mr. Thomas Baird, Bright, Brant, writes:—"It is the prevailing opinion among men of science that the clearing of the forests has the effect of restraining the rainfall. I was reading lately that through the reckless destruction of her forests, some of the Provinces of Russia had almost become a barren waste. We must expect the same results to follow in Canada. There is no doubt that the clearing up of the country has had a powerful effect on drying up creeks and rivers; the ditching and under-draining of low lands allows the water to run quickly off, and hence those sudden floods from which we have suffered so much this season."

Mr. Robert Watson, Windham, Norfolk, writes:—"With regard to the extent of clearing our forests, we have no forest to clear. Most of our farmers have little preserves of timber, varying from ten to fifty acres; from this all the timber fit for sawing has been sold, and some small farmers have none left for their own use. With regard to the drying up of rivers, creeks and springs, I know something about that. I have lived fifty years in this part of Ontario. When I first came there was a great part of the forest standing. Some creeks that would drive machinery the year round then, are now dry, some of them not affording water sufficient for the stock on a small farm. Others, where the mills are a necessity, have had to put in steam to afford them power to run in the summer season. Then we never housed our live stock before the 25th of December. Now we have to feed them with winter provender, sometimes in August, often in September."

Mr. Thomas Shipley, Falkirk, Middlesex, writes:—"Old settlers here state that the climate is changed, being more irregular in falls of snow and rain, with much more wind, cold snaps and uneven weather. Our springs and creeks are affected. This is a hardwood section of very heavy growth; seventy-five per cent. is now cleared and the work of clearing goes on, resulting in more destruction, high winds and all other changes connected with the destruction of the forests."

Mr. William Ross, Painswick, Simcoe, says:—"I very willingly testify to the creeks and springs drying up as soon as the forest is cleared away. There have been many discussions on the planting of forest trees among us farmers; but it seems hard to make a beginning."

Mr. F. Malcolm, Innerkip, Oxford, says:—"In this section very little timber remains except what is intended for fuel, and this is disappearing much faster than was expected fifteen or twenty years ago. Severe winters and high winds—disagreeably felt on account of the great reduction of forest trees—are having a disastrous effect on what remains. You will understand that where the wood is worth $50 per acre, and the land as much more when the wood is off, there is a strong temptation to denude; and this in the face of the fact that all are aware of the benefits resulting from forests as a windbreak. For the want of this our country has been ruined for apple-growing, that is, of such kinds as we generally have; our roads are drifted, buildings unroofed, fences blown down and a degree of cold experienced that the settler of thirty years ago knew nothing of."

Mr. John H. Houston, Petrolia, Lambton, says:—"I knew this country when it was a dense forest, so that I can tell you how much the forest has to do with us. There is no doubt that storms now sweep over with more violence; wherever our fruit trees are well sheltered they bear better. As regards the rainfall, the rains are more heavy, but not so regular. As to the creeks, the more the forests are cleared the sooner they dry. The water now gets a better chance to get quickly to the creeks."

Mr. Thomas A. Good, Brantford, Brant, says:—"Wood is getting very scarce in this vicinity, and in a few years there will be hardly any left. There is no doubt that springs are drying up. We get our rains now in too heavy dashes, and nearly every year lately we have had a period of severe drought, caused, no doubt, by the timber being nearly all cut away. Our county has the smallest per centage of wood, I think, than any other county in the Province, not even excepting the County of York. Springs that I knew when a boy are gone, and others come to the surface further down the hills. If we should get a few dry summers there would be still more difference observed."

Mr. Thomas Smith, Rosemont, Simcoe, says:—"The neighbourhood is fast becoming stripped of its forest on account of a settler being on every hundred acres, and when each farmer was clearing up his land he thought from five to ten acres was sufficient woodland to leave. The consequence was, the wind got such a sweep that it blew down a great deal of the heavy timber; and as the bush got thin the sun got striking at the roots of the trees, then such timber as hemlock and beech commenced to die, and thus the thinning of the woods went on."

Mr. John A. Campbell, Simcoe, says:—The evil effects of too much clearance are as yet principally confined to the increased risk to the fall wheat. We grow fruit and vegetables also to some extent, and for the past two years have had some sharp experience of the evil effects of cold winds. It is also possible that the growth of our farm crops may be retarded thereby, though not to the same extent."

Mr. A. Milgan, Blenheim, Oxford, says:—"This part is being cleared pretty thoroughly. One of our councillors remarked at a meeting the other night that this township (Blenheim) had not any timber left to build her bridges, people being of the opinion that they can do better by cropping and then buying their fuel."

Mr. John King, Middlemarch, Elgin, says:—"Seventy-five per cent. or more in this locality is cleared, and in what is left openings are made which will let the wind sweep through and destroy it. Farmers are complaining that their wheat in winter is exposed to high winds, blowing the snow off and allowing the plant to lie exposed to the frost, killing it right out."

Mr. D. Kennedy, Peterboro', says:—"Timber is becoming very scarce indeed in this neighbourhood. Many farmers of from 100 to 300 acres are now buying firewood, and some are using coal. Fully half the farmers of this part will have to buy firewood before ten years. The prevailing opinion is that clearing the forest diminishes the rainfall."

Mr. Richard Shortill, Ballinafad, Wellington, says:—"The clearing up of the hardwood land and the old swamps has so much dried up the creeks and streams that several large streams, which eight or ten years ago drove large mills and factories, have gone dry, and only run when the fall and spring rains swell them up."

Mr. M. Martin, Tilbury East, Kent, says:—"It does appear that the annual rainfall is decreasing in quantity, a very dry season taking place every other year. Cannot say whether it is caused by the clearing of the forests. I may say further, that farmers are beginning to learn the importance of having a belt of wood or shade trees to shelter the the winter wheat, invariably a good crop being obtained where it has been sheltered by a wood or a belt of trees."

Mr. William Patterson, Almonte, Lanark, says:—"As to the rains, since so much of the forest has been cleared, there is a marked falling off with the exception of this year. During the last ten or twenty years there has been cause for serious alarm; droughts of three or four months with not a single shower have been of common occurrence."

Mr. John Malone, Niagara Falls, says:—"Thirty-five years ago, with plenty of woods all round, good crops of fall wheat were raised here with very poor cultivation. Now the most improved cultivation fails. The snow blowing off the fields leaves them exposed to the frost. Where a field is protected by woods south-west or north-west, a crop of fall wheat rarely fails."

Mr. Robert Flynn, Olden, Frontenac, says:—"Where th[illegible] been cleared or burnt off, the springs in the granite ranges (wher
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mere bog holes are now quite arable. Wells, formerly
completely dry, and large sections of country have to c

Mr. H. J. Barber, Boston, Norfolk, says:—"In thi scarce, where at an early day it existed in abundance of all kinds and of the best quality. A large amount of first quality pine was cut down and burnt with the other timber; but since there has been a market for pine lumber, it has been rapidly cut and sent off, until scarcely a pine remains to be seen, except bushes, which, if protected, would soon replace the old for coarse lumber. Hard timber has also been slaughtered until the farmers begin to see their folly and begin to talk about it."

Mr. R. Craig, Belmont, Middlesex, says:—"When there was plenty of forest there was always plenty of water; it is very dry in this section at present."

Mr. Geo. Binnie, Bunessan, Grey, says:—"I do not think that the rainfall is any less than before, but I think it falls at more irregular intervals, and in greater quantities at once; that the weather is more liable to extremes both in drought and rainfall than it was some fifteen or twenty years ago. There is no doubt that the destruction of the forests has had an effect on the streams of this country, the tendency being to decrease the volume drained off by them in several ways. The ground absorbs more of the rainfall, it evaporates more quickly, and what is left drains off sooner than when the country was covered with forests."

Mr. Henry Doupe, Kirkton, Perth, says:—"I must say there has been a drying up of creeks since the forest has been cleared away—that is the water goes away earlier in the spring, and is less in the creeks in summer than formerly. When rain falls it gets away more quickly, which may be accounted for by open or underdrains leading to creeks and small streams, and also from the effects of wind and sun on cleared land. As to the quantity of rain, I would say that I think it very little less than formerly. During the past summer more rain fell here than in any season for the last thirty or forty years. When rain falls with thunder, I think for the time it lasts that it falls more heavily than formerly. The woods are getting less every year—there are a few farms that have no woods standing—mostly all have from five to twelve acres of bush. I am speaking of a radius of ten miles all round."

Mr. Benj. F. Browne, Gamebridge, Ontario, says:—"The disappearance of the forests is certainly affecting the rivers, streams and springs in this locality. Streams and springs that had been running since the memory of man were quite dry in 1881 and 1882, and water in many places was very scarce."

Mr. Robert Purves, Kinloss, Bruce, says:—"I am of the belief that with proper wind-breaks we could uniformly raise better crops. Some say that the reason we do not raise as much per acre now as when the country was new is that our lands are becoming poor; but such is not the case in many instances, as the new land we clear now will not yield the same per acre as when the country had more shelter."

Mr. James Ross, Barrie, Simcoe, says:—"Our creeks dry up very fast after the forest is cleared away; also our rainfall is very much less—not nearly so many summer showers. My opinion is that tree planting should be encouraged as much as possible for the general benefit of our country."

Mr. G. D. Platt, Picton, P.E.I., says:—"I believe that belts of forest trees across our farming lands would prove of value in mitigating the severity of droughts, as well as in retaining the natural winter covering of snow as a protection to fall crops. I have frequently observed instances proving the great value of groves and clumps of trees in the latter respect."

Kent, says:—"The rainfall is considerably less now
first cleared."

River, Queen's, N. S., writes:—"Our dry seasons

a, Wentworth, says:—"I am satisfied that the sudden
o destruction of our forests. There is getting to be a
ill soon be a far greater scarcity."

says:—"Regarding the influence of forest growth in
within my own knowledge. On my father's farm was
acres, surrounded by, and partially covered with a
l pine. In one corner was a spring strong enough to
ing a never-failing water supply for cattle. Some years

ago a forest fire ran over the land and killed all the timber round the meadow, leaving it open to the sun. It dried to the bottom, and next season it was found that the spring had ceased to flow, and the creek had in consequence disappeared. A fence was placed round the meadow, not following its irregular margin, but in straight lines with results of leaving a space between the fence and the edge of the marsh, of from ten to fifty yards in width, and this marginal space at once threw up a strong growth of young timber which in a very few years made a dense thicket. No sooner had the thicket began to shade the ground than the spring again began to flow, and has since continued to do so ; and, as far as I have been informed, has not failed even in exceptionally dry seasons."

Mr. Robert Flynn, Olden township, Frontenac Road, says :—" As to what extent the country is cleared. In real *bona fide* clearance I do not think there is one-eighth, but fire and lumbering have not left us one-fourth."

Mr. Moses Leairs, Severn Bridge, Ontario, writes:—" In a very few years many in this new settlement will have neither pine nor hardwood of any account."

Mr. Daniel Marshall, Keppel, Grey, writes:—" Ten years ago this neighbourhood was nearly all forest. but the forest is being cut down everywhere, rock elm is all gone for square timber. Now the axeman is in the swamps, cutting telegraph poles, railroad ties, fence-posts, and saw-logs, our saw-mill men are calling for all kinds of hardwood, and saw-logs, so that in ten years more there will only be culls, except some small pines that are protected. Our firewood will not be easily obtained in ten years from now."

Mr. J. Rudd, Clinton. Huron, says :—" As to what extent this neighbourhood is becoming cleared : Some farmers have not one acre of woodland while others may have from five to ten acres ; there may be an exceptional case of fifteen or twenty acres."

Mr. John Darby, Crown Hill, Simcoe, says :—" The hardwood forest is being rapidly cleared away, so that many farmers find themselves already without firewood for their own use. The principal part of the forest left is composed of low-lying or swampy land. Timber for building purposes is scarce, and hemlock lumber is taking the place of pine where practicable."

Mr. George Buskin, Artemesia, Grey, says :—" The Saugeen River and Little Falls River both start in this township. Since the forests are partially cleared, both of these are failing in the summer months. I believe, in time their mills will have to put in steam."

Mr. J. A. Ramsden, Sherkston, Welland, says :—" A considerable number of farms are entirely cleared of forests, and perhaps ten acres of the hundred throughout the township would be about the average of the woodland still uncleared ; but it is being cleared all the time, and dying. and at no distant period the original forests will all have disappeared from this section of the country."

Mr. A. M. Wigle, Ruthven, Kent, says :—" I am sorry to say that the original forest is in many localities all gone, and there is no spontaneous growth, nor any effort to reproduce ; but a continual cutting at the little clumps of bush left by the first settlers. I would and do say to some, " woodman, spare that tree ;" but although young men do see the havoc of hard winters on their wheat, in the unsheltered fields, yet they hope it will not be so next year, and they go on cutting their bush."

Thomas Beckton, Glencoe, Middlesex, says :—" This part is getting cleared. The farms are small, so that home consumption is using up the wood. The storms in summer blow many trees down."

Mr. B. B. Smart, Sarnia, Lambton, says :—" One thing is certain, that timber is every year becoming scarcer—both fencing and building timber is very scarce now. The half of the farmers on this line now could not find timber enough on their land to build a barn, and where the supply is to come from ten years hence it is hard to tell."

Mr. John Gibson, Milliken, York, says :—" I am sorry to say there are but few in number that have bush worth fencing in, and many have none. There has been a fearful waste, and no doubt the want of timber is now greatly felt."

Mr. Jno. McMillan, Constance, Huron, says :—" In this neighbourhood the woods are disappearing very fast. On account of cattle running in all the pieces of bush left, there is no young timber or undergrowth. Most of our streams dry up in ordinary dry seasons, and many wells give out that have been in use for twenty years."

The reader will observe that a great number of experienced men give it as their opinion that the over-clearing of the forests in Ontario is drying up the surface of the land. The numerous underground channels, fed by the forests, which formerly flowed near that surface, giving life to the earth, and enabling, in dry seasons, the roots to obtain that moisture below which the parching skies deny above, have receded to a much greater depth. Formerly, in digging for water, we frequently struck a spring within six feet--now we are more likely to excavate forty before obtaining it.

We have but results by which to judge. The chief operations of nature are hidden from our view. We see the young tree grow—the buds come forth—the leaves in green luxuriance cover the branches—the tender blossoms open—the fruit appear and swell to full and rich maturity. But the actual process of accretion, particle by particle—how sun, and air, and earth, and water, wrought unanimously, till in turn appeared a clothing of leaves—a brilliance of flowers—a weight of fruit—where, months ago, leaf, flower or fruit was none—is among the secrets of creation yet but partially fathomed. But we know that each gave their aid—that the earth opened its storehouses—the air gave of its treasures—the sun and the rain warmed, tempered, adjusted, and carried on its way the nourishment the others supplied. And we know that when successive suns have warmed the earth and air, and successive showers again have moistened all, till branch and tree-trunk drip and flow, and the dry ditch is a clear rippling rivulet again, that then the cornfield puts forth and increases its wealth of pendant leaves, that the fast growing wheat reflects the light in deeper waves of fresher green, the broad embowering grove seems to rise in newer beauty, and cast forth stores of undiminishing fragrance upon the air. It is the result of the regular succession of heat and moisture—it is the great process of nature by which the earth is enabled to bring forth its increase. It is with this we interfere when we deforest the land.

This succession of moisture and fertilizing alternation of heat the field frequently owes in great part to the adjacent forest. If the atmosphere be too dry and vegetation suffer, the great reservoir of moisture round the forest roots is busily supplying the exhausted water channels below, and simultaneously sending vast columns of moisture through its leaves into the atmosphere above—moisture which must shortly fall in rain again. But when the atmosphere is surcharged with moisture, when above our heads the watery stores are passing from the equator to the pole, and rain is falling heavily every day, it does not leave the forest as the field; it is retained in the forest bed in millions of tons, for the benefit of both field and forest in a drier time.

Correspondence Concerning Second Growth.

I will now give extracts from correspondence from many parts of the Province, written by persons who, in all cases, have observed for themselves the progress of second growth, and the reproduction of the forest; and who are, it will be noticed, unanimous in the opinion that cattle must be excluded from such portions of woodland as it is desired shall long continue in existence.

Mr. Henry Westney, Highland Creek, York, says :—"As far as I have observed, the result of cattle being kept out of the woodland has been a dense growth of young trees of remarkably straight and rapid growth; while, on the other hand, in those pieces of bush to which they are allowed free access, the undergrowth is very scant, small bushey trees trimmed like a hedge, or broken down and destroyed by them."

Mr. Thos. Fraser, Amberley, Huron, says :—"If trees are under four or five inches through, cattle are a great injury to them, as rubbing on the tender bark, and bruising it with their horns, will cause the bark to rise, and it might as well be off."

Mr. J. A. Ramsden, Sherkston, Welland, says :—"I have noticed that where cattle and horses are pastured in the bush, they keep down all the second growth and the trees are rapidly dying off; and I have also noticed that where the woodland is not pastured the trees look much more healthy. and there is almost invariably a thick undergrowth."

Mr. Thos. Phillips, Bond Head, Simcoe, says :—"Were it not for the cattle eating the small shrubs, there is no doubt, where not tilled, there would soon be a good stand of timber of the hardwood variety. I have seen a good growth of young plants start in the spring, of the maple, oak, elm and basswood; but the cattle soon eat them off. In the timber lands where cattle are not allowed access, there is generally a good growth of timber in this locality, of maple and beech. It would take about five years to attain sufficient height to be out of the reach of damage by cattle, as they are very fond of young timber."

Mr. D. Shooley, Ridgeway, Welland, gives another idea. He says :—"The cattle will not browse or bother the young trees after the first of June. Where the bush is getting thin and reproduction is wanted, I would advise keeping cattle out for three or four years, also early in the spring a few years longer; then, if thinned out would be a very cheap way to replenish the woodlands."

Mr. John Gibson, Milliken, York, says :—"I have never seen, where cattle had a free run in the bush, that any small trees ever came to anything—they are invariably scrubby and stunted."

Mr. Andrew Childs, Rutherford, Bothwell. says :—"Doubtless it would be of great importance to have cattle kept out of woodlands—woods that are intended to remain as such to supply firewood and timber for fencing. or for mechanical purposes. In fact small trees have scarcely any chance to grow unless protected from cattle."

Mr. George Sanderson, Colborne, Northumberland, says :—"I have kept cattle out of a small wood lot, for a few years, and now it is so thick with small young trees that one can hardly get through. There are lots of maples ironwoods, beeches and basswoods, from six to twelve feet high—just right to set out along the fence. Some are from one to three inches in diameter. I think the large trees are growing better and look more thrifty than they did before I gave up pasturing. I let the cattle run in the wood now after harvest and they do not seem to do any damage. I am sure it will pay to keep the cattle out for a few years at most."

Mr. N. A. Malloy, Laskay, York, says :—"The effect of keeping cattle out of woodlands is quite apparent, the young wood coming up quite readily. But when cattle are allowed the run of the woods at pleasure, scarcely a plant remains unless it happens to be protected by logs or brush."

Mr. R. Postans, Oakville, Halton, says :—"I know that cattle will sometimes destroy a great number of young trees; in a dry time when pasture was almost burnt up by drought, I have seen an ox bend down a young sapling over two inches in diameter and twenty feet high, keeping his neck over it till he had broken it down, or holding it down till he had browsed the top."

Mr. Thos. McLeod. Dalston, Simcoe, says :—"If you wish to preserve a young plantation, by all means keep cattle out—sheep are even worse than cattle."

Mr. David Spence, Whittington, Wellington, says :—"A friend of mine fenced off five acres of bush for the purpose of allowing the second growth every chance to grow; and I assure you it is beautiful to look at—in three years you could not see a man one rod off it was so high and so thick. There would be no use in keeping cattle out five, six, or even seven years and then letting them in. I have seen cattle in a bush throw their neck over a sapling like a handspike, and would bear it down until they had eaten all the foliage off —then it is sure to die."

Mr. George Leverrage, Fullarton, Perth, says :—"I have noticed that cattle will in a very short time destroy all the under-brush in a piece of vigorous woodland."

Mr. Thomas Smith, Rosemont, Simcoe (a keen observer of nature), says :—"I think it would be well for farmers to try the experiment of keeping cattle out of a portion or all of their woods. As the bush gets thin the sun strikes at the roots of the trees, then such timber as hemlock and beech commence to die, and thus the thinning of the woods goes on. I notice that where there is a thick growth of underwood the larger trees keep greener and more thrifty, in fact the whole woods resemble more closely the original forest."

Mr. Thomas Shipley, Falkirk, Middlesex, says :—"When timber land is cut or slashed and lies in a rough state, the young trees come up rapidly, but before they attain any strength the fallen timber and brush which protected them is either burned, or is so decayed that cattle get in and nearly all are broken down. Some few grow up, but the growth is thin, and they grow bushy, branching out about ten feet from the ground, and become all top and not much trunk. I have about twenty acres like this—the trees are about twenty years of age, thirty feet high and one foot in diameter (elm, oak, beech, ash, basswood); but cattle and grass prevented a thick growth, and they are not, and never will be, anything like the forest primeval. Apart from the planting of forest trees, which can be done, I must say that in my opinion it would be an easy matter to reproduce the forest, simply by protecting it from all manner of invasion."

Mr. John King, Middlemarch, Elgin, says :—"I believe that allowing cattle to run at large in forests is almost certain destruction to anything like a healthy growth to young trees. I know of some few, and but few, who keep the cattle out of the forests, and their woods are so thick with underbrush that it is difficult to walk through them; and as to the majority of forests where cattle are allowed to run, you can ride on horse-back through them anywhere."

The following shows how easily the seed will take. Mr. Robert Currie, Wingham, Huron, writes :—"In this part of the country the cattle will keep down the young sprouts and saplings in winter and the tender leaf in summer. I have had a field near to the bush ploughed early in the fall of the year before the maple seed fell, and the wind blew the seed over the field so even that in eight acres there was not one square foot in any part of the field without a plant, and the nearer the bush the thicker they grew. The field was for roots, and was not ploughed until the 10th of June, when the plants were from four to eight inches high all over the field. People who are planting here use maple principally. The sapling from seed of maple or cherry will not on an average exceed one foot in the year; but if from roots of old trees of either variety they will often grow more than two feet in a good season. If anyone wants to have a piece of bush here, either planted or the small underwood reserved, they must keep cattle out of it; it would take six or seven years to be out of the reach of even small cattle of one or two years old."

Mr. A. D. Ferrier, Fergus, Wellington, says :—"Cattle will destroy every kind of tree they can reach, and seem to delight in the work of destruction."

Mr. Thomas Baird, Bright, Brant, writes :—"Whenever the forest is thinned out the Indian and other grasses get in, and when this is the case the underwood ceases to grow."

Mr. Philip Kelly, New Durham, Oxford, says :—"Mine is the only hardwood bush that I know of in this neighbourhood where cattle are not allowed to run, and it is also the only one in which there are any young trees."

Mr. John Bishop, Palmyra, Elgin, writes :—"Fence off a piece of woods and it soon starts up as thick as it can grow; but let sheep and cattle run through woods and all undergrowth is cropped off, and grass takes its place, crowding out even the trees that are left, except a few of the hardier kinds."

ONTARIO OBSERVATION AND CORRESPONDENCE.

The following pages give many instances obtained both by actual observation and correspondence concerning forestry in Ontario, and will give the reader an idea of what slight progress we have made in this important matter. Since the late agitation on this question, induced by governmental and other efforts, I am glad to say a number of attempts have been made in this direction. Descriptions of these, however, are better deferred to another year, when their success can be better noted. In the meantime, the reader will find, here and there, valuable evidence concerning the different branches of forestry.

The Lombardy poplar, in situations such as between roads and grass land, where its occasional propensity to sucker will not harm, is known as an excellent wind-break. Yet it has been objected, that it breaks off in strong gales. I do not find this the case, but some instances to the contrary. For one, at Mr. C. R. Sing's farm, St. Vincent, there is a row of magnificent poplars in front of the residence, two feet through at the ground, sixty—nearly seventy—feet in height, a broad mass of light green foliage from base to summit,—a landmark far across the water, planted but twenty-four years since. Cords and cords of wood could now be cut from their massive trunks, and will be some day, poor as are its burning qualities, if we plant not our maple the quicker. But this tree, planted closely (these are eight feet apart, and their branches touching), would evidently form magnificent farm wind-breaks. With proper interspersions of such sixty-feet walls, or walls even of trees of much lesser size, the snow would be level all the winter long on field and path, the gentle and soft-handed protector of the young winter wheat, the smooth support of the rapidly gliding sledge, rapidly gliding, as it might, to its journey's end, while the farmer sits jovially behind his rushing team, and the smoke of the fast-passed cottage rises uprightly through the white and frosty air.

I remember one Christmas, some five years back (it was on a broad and sloping mountain side, cleared for many miles of its forest by the woodman's art, as closely as if some gigantic razor had shaved the land), a party of us waited our Christmas dinner till our invited friends, two miles along the town line road, should arive. They arrived, having taken four hours to drive the distance, four men walking in front, wet through, breaking down by main force the five foot drifted wall of snow, which the horses would never have plunged through without splintered pole or broken traces. Wind-breaks would have saved it all, and if general would save millions of dollars' worth in Ontario every winter, in delay, horse-flesh and waggon mending.

There is an instance on this same farm which clearly proves how rapidly a poplar wind-break can be secured. Here is a lengthy row of younger poplars, planted but seven years ago by Mr. Sing himself. They are quite fifty feet high, strong, thrifty, upright, and showing every promise of rivalling their seniors at an early day. There is little doubt that these are firmly rooted and strong trees, since their lofty tops arise, straight and unbending, right in the face of every north-east breeze that sweeps across the wind-tossed Georgian Bay.

On the same farm is another description of wind-break. This is an evergreen fence and, consequently, "always there." All along one side of the orchard stretches a row of balsam and of cedar, six feet apart, their lower branches closely joining where tree meets tree, spreading to a broader width on either side of the row and each—the balsam with its coniferous foliage, the cedar, a mass of curiously ornamented fringe-like leaves—rising in pointed cones, a long succession of green and brilliant pinnacles, forming as handsome and effective a wind-break as orchard need have or eye rest on. Planted twenty-four years ago, two feet high, and kept mulched.

The cedars are eight inches, the balsams a foot in diameter. The soil is sandy, the situation low compared with the mountain range, which stretches along the front, but high above the vast adjacent sheet of water in the rear.

Mr. Hiram Andrus, St. Vincent, makes the following statement respecting a most important matter, the class of trees to be planted by farmers in exposed and hilly regions. He says that in that locality, much of which, we should remember, is on the slopes of the Blue Mountains, the elm had better be planted than the maple. He pointed out many instances. "Here," he says, "these fields were cleared of the forest, to my knowledge, twenty or twenty-five years ago. These trees which you notice along the fence (they extended here and there for miles) were not left here purposely, but were small shoots at the time of the clearing, and have remained, simply because the farmers did not keep their fences clean and cut them down, which they would have thought at that time good farming. Now that the country round here is almost totally losing its forest, what with one man's and another man's clearing, they begin to recognize the value of these trees for shelter, for shade, and, occasionally, for timber." There are many maples, seven or eight inches through, and many of ash nearly a foot through at the base—the maples often twenty, the ash thirty-five or forty feet in height—the former a good shade tree, branching out while near the ground into large and densely-leaved head, the latter taller, dividing into many long, separate and independently aspiring branches, every tall tree top with a chronic bend to the north-east, which testified to the severity of the winds on the Blue Mountains, on the highest slope of one of which we then stood. "We find here," said Mr. Andrus, "that on this high ground which has a hard clay sub-soil, the maple spreads its roots without penetrating deep into the earth. The elms, on the contrary, send down deep and solid tap roots. The consequence is that for the first few years the winds shake the hold of the maple on the earth, while the deep-set hold-fasts of the elm keep it firm in the ground. This retards the growth of the maple so much that the elms, as you see, are, in their twentieth year, twice as high as the maples. The difference is not so marked in the low ground; in fact, in the sandy loam of the valleys the maple grows as rapidly as the elm. There is, however, an advantage in possessing elm timber. This second growth elm wood is far superior to its progenitor, the great rock-elm of the Canadian forest. One tree stem when only five inches through will make four axe-handles, while the length next above will make double-trees and whipple-trees that nothing will break Look at one of my axe-handles—it has stood the hard work of my wood-shed for a long time, chopping up and splitting great logs, and it is good as ever still. Why, it was put into a new axe, and has nearly worn it out, while generally an axe will wear out a lot of handles. Then what a beautiful polish the hand has given to the wood—it is smoother than glass—you never could get that on a hickory axe-handle. Now that they bend everything by steam and use only two pieces in waggon-wheels instead of a lot of felloes, this second growth elm would just do for them and for sleigh-runners, and a thousand other things. It would make splendid fences, Plant your young elms at the proper distance for posts, and when they are big enough fasten your wires along, and there you have fence, wind-break, and shade-row, all in one Then when they are grown up (and they will grow if planted and taken care of, at least twice as fast as those you see here), any time you need it, by putting in a post or a stout young tree, you can have a fine log of second growth elm timber."

Mr. Hartman, St. Vincent, speaking of the loosening of trees by wind, said that he did not like staking them, as that always more or less injured the bark and tended to retard the growth, but that it was his practice every spring to tread a fresh sod firmly in round each tree stem, which he found produced a good effect. He mulched, he said, young trees by taking along a waggon load of wheat straw and laying under each tree a carpet of straw about eight feet square and six inches thick. This he found effectual.

Mr. G. Leslie, Leslieville, has some very fine specimens of the silver poplar which, planted twenty years ago along the road-side, are now immense trees, three feet through, sixty feet in height, their branches spreading thirty feet on every side. Here are also elm trees, eighteen inches through and forty-five feet high. It will be noticed that these elms are perhaps double the size of those described in St. Vincent. These are in a black loamy soil, formerly a swamp—[St. Vincent mountains a clay loam—while these were transplanted; the others, the natural second growth.] As for situation, both are along the road-sides. Here are also some large white birch trees, planted thirty years ago. They are, perhaps, two-foot six at the base and nearly as high and broad as the silver poplars. There are near them some red oaks of the same age, as large in stem, not as immense in spreading foliage, but still great trees. Here are also to be seen great avenues between high walls of English birch, a tree apparently not greatly unlike our own second growth birch of the Canadian forests, but of leaf smaller, and of growth more pyramidal; of the Canadian tamarack, a tall and pointed tree of pale green foliage—a strange foliage, needle-shaped in leaf, yet with an appearance sometimes cloudy, sometimes moss-like; and of the Norway spruce, tall, perpendicular, its colour a rich and deeply-darkened green on which the eye loves long to dwell. All these planted fifteen years back, are over thirty feet in height and with stems often a foot in thickness. An odd peculiarity is here seen—the Norway spruce can be either hedge or forest tree. Here is a hedge, six feet in height, two or three feet through at the base, narrowing as it rises and trimmed to an edge at the top. The shears have kept it so; the trees are small, the hedge is a mass of small coniferous leaves,—it is a hedge and no more. You would say, "This is nothing but a hedge-plant," but every dozen feet. one stem has been allowed to grow and manifest its nature. No more a hedge-plant, it leaves the topmost border of its fellows, a stem six inches through, and rises erect a dark and cone-shaped Norway spruce confessed, full thirty feet in the air. The hedge, however, is dying, with too close cutting It makes a good wind-break, the trees being given the room they need.

As you approach Leslieville you find a wooded neighbourhood. There is half a mile of the Kingston road each side shaded with large trees, planted in the public ground; and, north and south, a hundred acres extend, covered everywhere with young trees of a thousand kinds, interspersed with towering plantations, dotted here and there with mighty trees, the monarchs of the grove. When we learn that thirty years ago there was scarcely a tree in sight, we see that it is in the power of man, if he choose, in no long period to reproduce the forest.

The silver poplar spoken of above would evidently be valuable wherever it is desirable to rapidly produce large trees. Its timber, an unusual circumstance with the poplar variety, answers well for firewood. It is easily propagated from cuttings of last year's wood cut a foot long from above a bud to below a bud, and thrust nine inches into the ground. Although of very great value, farmers must be warned that it has, as have many of the poplar varieties, a tendency to run in the land, and throw up independent shoots, especially where cut by the plough. But these of course are easily kept down by care. I observe no such shoots near the numerous large poplars left standing here and on the adjacent roads. Mr. Leslie considers the fall the best time for planting.

Mr. Beadle, St Catharines, states that when he wants seed trees of this description, (maples) he sends some one to gather it, different kinds being plentiful in the streets and adjacent woodlands. He plants these seeds at the time of their ripening. If this be in July, by fall the young trees can be transplanted. If they be seeds which do not ripen till the fall, they are then sown, come up in spring, and are transplanted when a proper size. Mr. Beadle has had much experience in tree-planting. Of the two, he prefers spring planting to fall. The cold winds of winter, he thinks, may sometimes dry the life from out a young and tender tree. The best security, however, is mulching, which is equally valuable in fall as in spring. Near his property are a row of maples—the hard maple of the Canadian woods—the sugar maple, prolific in remembrance of forest camp and simmering boiler, and of many a sap collecting journey. They are, he thinks, thirty years old, of a thickness of eighteen to twenty-four inches, forty feet in height and of spreading yet closely branched heads. The soil beneath both elm and maple is a rich and gravelly loam, somewhat, however, inclined to leach.

Mr. R. N. Ball, Niagara Township, possesses on his land several improvements of great interest to forestry students. This historical Niagara County, by the way, is studded with battle grounds and rife with interesting story. Here, as we pass at midnight, our horse's feet sound dull along the deep road cut in the mountain's face. Seventy years ago there was no road; but many found a path, and that a quick one, to eternity, for to the right we look by dim moonlight over the sharp sloping hill down which, with many a soldier slain, and many a scalp torn from the skull, amid the mingling din of musket shot, of Indian yell and Saxon blasphemy, the Union Jack, upheld by Pagan and by Christian hand, forced the Stars and Stripes into the whirling waters below. How rapid are earth's changes. A month ago, and these bare trees were myriad-leaved in vivid green. A century, and where the solitary squaw sells her paltry baskets, the land, from sunrise to sundown, swarmed with the powerful tribes of her dusky forefathers. High above us, through the dim night air, towers on the hill the monument of Brock, recalling the tough English schoolboy, victim of many a flogging, and victor of many a bruising match, in short time transformed into the stern British general, loved by friend and feared by foe, traversing land and sea to fight his country's battles in the distant wilderness of this then savage land. Here again on that distant eminence repose the bones of the Butler family, those implacable refugees of '76, of bitter memory to every American born.

Beside his house Mr. Ball has a fine elm, planted by him, a sapling taken from the forest thirty years ago, and now seventy feet in height, its branches extending from side to side nearly another seventy; its trunk, a mass of solid timber, nearly thirty inches through. Here is also a walnut tree, its branches laden with the ripened nuts, but twenty years of age, yet with a stem of fifteen inches, a height of sixty feet, and a spread of trunk as wide.

Here is one of the best specimens in Canada of what may be done in evergreen windbreaks. Fifteen years ago Mr. Ball had seven hundred and fifty young pine trees taken from their forest bed and planted on his farm. The method in which this was done is interesting and gives a valuable example. Earliest spring was chosen, on a day when the ground, thawed from the winter frost, had again frozen an inch in depth. The earth was cut around the young trees, leaving a circle of about eighteen inches across, thus lifting, in the then state of the ground, a disc of earth and root with each tree of two to four inches in thickness. Out of this great number of trees but five failed to grow. They are now nearly forty feet high, their lower branches spreading over thirty—many stems a foot thick—a long succession of cones of living verdure, brilliant with darkened green.

Some miles away is a remarkable self-sown wood. This originally was a forest of that timber of which Canada once had so much—the white oak. The forest across the road, extending to the shore, is yet of that character; many sturdy oaks being still there, though the fine merchantable timber—the long, straight, clear trunks are gone, carrying passengers over many an ocean, strewed perhaps in wreck on many a shore. Intermixed with the oak forest were some mighty pines, and when the land across the road was cleared, the pine seed, scattered by wind, covered a portion of the upturned ground, and the land not being ploughed again, a young forest of pines, perhaps three acres in extent, have sprung up and have thriven, standing as close as they can stand and live. This was eighteen years since, and they are now nearly fifty feet high and have killed one another out till they now stand six or eight feet apart. Here the process of the formation of a dense forest may be clearly observed. The under-branches, deprived by the density of the foliage above of the rays of the sun, are dying and dropping off, the stems being now bare frequently for twenty feet in height, the broken ends showing where branches have been. Up at the top all is green and vigorous. This process will now continue, the falling branches every year leaving a greater height of trunk; many of the weaker trees also dying out to give the others room, till there will remain a dense forest of great pine trees a hundred or even a hundred and fifty feet in height. Nothing is wanted evidently, from this and other examples, but to plant trees thickly and let them grow as they do in the natural forest, striving ever for height, and prevented from lateral extension by the discouraging shade. These trees, many of them now with stems a foot thick, are fit for beams, and would, in five years' time, yield a good supply of boards. But to get the great trunks, the tall, clear, valuable timber of our forest pine, would need a longer period. The example shows, however, with great plainness, how easy, with care and time, is the reproduction of our pine forests, and how soon we would begin to reap the benefit, for much good timber might now be thinned from the grove just described, and the plantation be all the better for the loss.

Mr. Ball, whose success in planting and opportunities of observation entitle his opinion to great weight, says that for wind-breaks one row of pines is better than two, as the trees, with light and air all around, will branch out strongly in every direction, while in the double row the inner branches touch and die as if in a dense forest, the outer branches remaining vigorous, and the attempt at growth in this divided direction does not seem so friendly to the tree. Instances of this were plainly to be seen, for here are both double and single rows, the single row evidently now, after fifteen years, as good a wind-break as the double.

On these farms is still much woodland. "Here," said Mr. Ball, "are yet two hundred acres of the original forest. At first cattle were not kept out, and did much injury to the young trees, but for the last twelve years they have been rigidly excluded, and you see the result." It was a beautiful forest, dark with heavy trunks below, bright with red and yellow foliage above. But the undergrowth was superb; protected from the cattle and from the seed-destroying hog. the young trees had sprung up everywhere, close, fresh, luxuriant, thirty feet in height, an endless wealth of crimson leaf and shining stem. There the young red oak waved its great leaves, pear-shaped and serrated; there was the beech leaf, prosaic and common till you examine how beautiful the mathematical straightness of its crossing fibres. There stood, in thousands and in tens of thousands, young trees of the white ash and the black, the pine, the ironwood, the whitewood, and almost every tree indigenous to Canadian soil. "We need never thin them," said Mr. Ball; "nature will do that; the fittest will survive till a tall forest takes the place of the close undergrowth. But it is time," he said, "that the largest trees of the original forest were cut; if longer delayed their fall would injure many young trees which, in their present flexible state, would not be nearly so much exposed to injury." There are many young seedlings—oak, ash, maple, each with two large leaves developed, pushing, half covered by the leafy *debris*, their infant way from out the virgin soil.

It may be remarked that when hogs are let loose in the forest they eat, in preference to all others, the acorns of the white oak, thus destroying the chance of propagation of this most valuable of trees.

On and near the property of Mr. M. Quinlan, Simcoe, are to be observed some interesting stages of wood-growth. Here was, partly along the forest, partly extending into some uncultivated fields a lengthy belt of young second growth timber of all sizes, but a great number of them twelve feet high and nearly two inches thick. By far the greater number of these are maples, but here is the white ash, here and there an elm, and here a youthful poplar, stripped by the October winds, stands upright, a tall and tapering lance, clad in yellow bark of beautiful smoothness. There are hundreds of thousands of young trees. Mr. Quinlan states that the place has been perhaps fourteen years protected from cattle, and that these trees have sprung up since, the larger at first, the smaller later, in all cases, no doubt, by means of seed blown from trees near at hand. The soil is apparently a clay loam of some richness.

A row of pines, planted over thirty years since, are now pointed out, their stems from a foot to fifteen inches in thickness, their topmost limbs thirty-five to forty feet high. They have been perhaps twelve feet apart, the lower side branches have long touched and encroached on one another, but in every other direction the trees had room to grow, and were exposed on all sides to sunlight and to wind. They have grown consequently in a very different manner to those instanced at Niagara by Mr. Ball, which thickly planted and surrounded on all sides by their fellows, straining towards the life-giving sunlight from above. Here no lower limbs fall, each tree is distinct, a pinnacle of branches; but to grow, to flourish and to produce the good pine timber of the forest, it is evident the forest contiguity is required. These trees, thirty or thirty five years old though they be, show no signs of making timber as did the close, self planted grove observed near Mr. Ball's. There a tall stem was in process of formation, and clearly destined to grow taller still. Here the up-drawing power of surrounding branches absent, growth appeared almost at a standstill, so that these trees, though double the age, would scarcely have yielded each by each as much timber as the far younger specimens in the Niagara Grove.

North of these is a smaller growth of hemlocks, their sombre foliage darkening the prospect. They are of size not greatly different from the pines just described, save that the cone shape is less pronounced; they stand, like them, in sturdy independence, and, like them, appear to be of slower than the forest growth. Instancing some seen along the road, Mr. Quinlan remarks that elm grows much more rapidly than the maple. "These," he said, "are water-elms. Many rock-elms were planted, but were one by one cut down to furnish strong young timber for axe handles and other purposes." This corroborates, as we may observe, the opinion of the Blue Mountain farmers as to the desirability of planting this tree, and of the usefulness of its wood.

Within the limits of Barrie is a large grove, a goodly number of acres in extent, formed of beautiful, though scattered, second growth pines, containing many well-developed trees, from thirty-five to fifty feet in height, and from nine to eighteen inches at the base. The earth is a sandy loam of good quality. Crowning a long and elevated ridge, the bright sunlight mingling its green masses with silvery gleams, this little forest is, from some of the near and lower streets, an object of great beauty. Judge Ardagh, in whose charge the property now is, informs me that thirty-five years ago a dense, tall and principally hardwood forest overspread this and much more of the surrounding land. The original forest is completely gone, and has evidently been succeeded in that period by the present growth.

Mr. D. James, Yonge Street Road, has, within the last ten or twelve years, planted many trees, both native and foreign, and has met with excellent success. Bordering the road at the entrance stand a hundred and twenty-five young pine trees, eight feet apart, many of them fifteen feet in height and seven inches through in stem, sturdy trees, all clear of bark and spreading of branches, full of promise of grateful shade beside the dusty road in many a sultry summer day to come These trees were taken from the bush when a couple of feet high, about a mile to their present position. Mr. James states that he had taken great care in each case to bring a large ball of earth around the roots. This is, he says, far more necessary in removing trees from the forest than in the case of those obtained from nurseries, as the roots of the forest sapling are few and spreading, those of the nursery seedling more numerous, close and compact. They were planted very carefully, about the 24th of May, mulched for two years and have been carefully protected from cattle.

Mr. James has also a long row of Canadian spruce, balsam and tamarac, taken from the bush nine years ago. Many of these are three inches thick at the stem, ten feet high and spreading well. They have been several times topped—the highest shoots being cut off—but for this they would have been fifteen feet high. The operation, it seemed, in this case, had rather kept back the general growth of the trees. When we compare them with the pines just mentioned we find that these are but three inches, the pines seven inches thick, yet the pines were planted but one year before them. My reader will remember some pages back, in speaking of the Norway spruce at Mr. Leslie's, the effect of the pruning shears was noticed, as having dwindled the evergreen into a small hedge-plant, while great trees of the same variety, simply differing in being untouched by the shears, sprung up tall and stately at regular intervals along the artificial hedge. This row was planted in November. There are also here long lines of the Norway spruce extending in various directions. These were purchased from the nurseries, small plants about six inches in length, set out in a plot for five years and thence transplanted to their present position where they have been growing for five years more. They now average ten feet in height and seem prospering and to prosper.

There is here, too, a small plot of maples, hard, soft and silver, ash, water elm, rock elm and basswood. These have been taken from forest ground four years ago, stout walking-sticks in thickness, and four feet high, the branches completely cut away and the roots left as numerous as might easily be dug. Their growth has been rapid; they are in height twelve feet and over.

The large farm of Snell Brothers, Edmonton, affords instances of several descriptions of tree culture, and I would wish my readers, who have wood lots yet remaining, to notice the instance of forest preservation.

Close to the house is a hawthorne hedge, 12 feet high, extending parallel with the lane leading to his house. Though it is a hundred feet from the lane to the hedge, the latter forms in winter a wind break sufficient to keep the snow from drifting into the lane, and consequently, as Mr Snell remarks, "our lane is nice level snow when every body else is digging big snow-drifts out of theirs."

Near at hand is a row, half a mile in length, of fine maple trees. Mr. Snell planted these twenty years ago. These were taken from the forest in a light sandy soil, and planted in a clay. They are planted about fourteen feet apart, are thirty feet high, the lower branches spreading fifteen feet, their stems a nine inch diameter; they were planted in the spring, but it may be noted, were never mulched, gaps in one or two instances of fifty or a hundred feet, occur in the line. These, it is to be noticed, are on lower ground than the rest. An under-drain would probably have preserved every tree; it is probable also that, had these trees been well mulched for the first two years, they would now be of greater size; and it may have been that the additional vitality thus secured would have preserved the whole row, despite the weakening influence of the lower land. This row, in summer time a tall and long extending bank of wavering green, gives the traveller, parching in his waggon-box under the sultry sun, half a mile of grateful relief, to secure which many farmers travel by this, although it may be rather a longer road. Why should not all our roadsides be similarly protected?

In this section, at all events, they are not unlikely to be. Farther on is a mile of more youthful trees of Mr. Snell's planting, four years in age, eighteen feet in height by about six feet in spread and three inches in stem; neither were these mulched, but Mr. Snell says they would have been of better growth had he done so. He had, he remarks, planted a number of others a year ago on high, dry and often-ploughed ground, which would, considering the state of the ground and the seasons, certainly have died but for the thorough mulching he had given them. They had all done well. In other instances it will be noticed that maples, when mulched, have done much better. I would, however, like to press the point that a slight stirring of the ground, by the hoe, spade, or cultivator enough to kill weeds, but not deep enough to hurt the roots, done say twice a summer, will bring trees on better than all else. Outside the circle of roots, (which is larger than the branch circle, you will find as you dig) you may dig deeply, and enrich if you choose, preparatory to the young roots coming that far. If you give trees care, they will respond to your exertions like living beings; if you give them none, they can be as slow and sulky as any labourer with a grievance.

Mr. Snell states that in planting trees along fences there was frequently more danger from the farmers' cattle inside than from the wandering cattle outside the fence. There should be no danger, he said, outside, for cattle should, in every township, be prohibited from running at large. Concerning the animals inside, all will seek the fences, sometimes that they are the most sunny, sometimes the most shady places, and while there, sheep, cattle and horses will unite in destroying the young and tender trees. Even if the pasture be rich and they have no desire to nibble the young and tender bark of the trees, they will, by leaning or rubbing against them, effectually check the sapling growth.

A little further on is the summit of a shelving bank which surrounded a beautiful and sylvan lake, its placid waters glittering dark and cold in the waning autumn sun—its waters the arena of an amphitheatre—an amphitheatre not surrounded by successive benches of interested spectators, but by successively rising terraces of tamarac and balsam, pale in ethereal pink, or darksome in sombre green.

Not all surrounded—everywhere the hand of the obtuse chips the nose off the statue—even here, by this quite lake, is an instance full obtruded on our view, along a lengthy stretch the opposing bank is treeless—a barren contrast to the rest. "The owner opposite," says Mr. Snell, "has cleared that bank, and has unfortunately done much to mar the beautiful surroundings of this pretty lake, while as for actual benefit from a farming point of view, he has achieved nothing. The land is poor and sandy: culture will never meet with a remunerative return."

Farther yet is a forest, rich in undergrowth and plentiful of young and thriving trees. Here may be seen in full and opposite view the difference between the sapling of the forest and the sapling of the field. Here is no longer the maple, no longer the ash of the roadside, stout, many-branched and square of stature. Here, beneath the tall and embowering branches, rises the young maple scarcely more than eight inches at the base, shooting upwards in sheer and twigless pillar, dark-grey of mottled skin, seventy feet of height and more, till its topmost twigs may burgeon into head whence sun and air may feed the trunk below. Here is the beech, almost equally tall slim and branchless, pressing upwards, instinctively aware that its life depends on attaining the sunlight above. Here is the yellow birch, scarce three inches through, forty feet in height, destitute at this season of foliage, on its few and scanty projecting limbs, and appearing, where a streak of sunlight falls upon its polished trunk, like a slender and rounded pillar of shimmering and dusky silver. All around everywhere down the forest glades, visible from our carriage, rises many another youthful tree—the elm, the ash, the oak—lofty and beautiful, six-inch stems every one, all emulously pressing to the light and life above. Every here and there stand the huge and older trees, but sparsely scattered; for this twenty-five acres has for this score of years yielded annually its thirty cords of fuel to stove and fireplace, and will probably continue to yield as much; for the process of reproduction is being continued in full vigour, and the forest earth is dotted with little seedlings springing up, ready to be trees in turn.

This piece of woods affords a good example of the manner in which the forest can be preserved if care be taken. There are two ways of preventing cattle from destroying the forest; one is to fence them out, the other, to keep their pastures rich. Cattle have always had free access to this piece of woods, but the adjoining fields where they pasture have always been kept in heavy grass, the cattle never being allowed on the pastures in spring until a rich growth has appeared. The consequence has been that the cattle have gone through the wood when they chose, without any inclination to feed on the young trees. It will be observed that patches of woodland so kept are not so liable to suffer loss by wind; the trees originally left at the edge, their trunks weakened by the force of a sun to which they were unused, would fall, but these could, either before or after being blown down, be removed and used for firewood. The young trees springing up round the borders, and growing up exposed to the sun, acquire the form of the low and many-branched tree of the open plain, which will not itself blow down, and acts as protection against sun and wind to the older trees behind it But we must remember that, if cattle, anxious for food, had been permitted entrance, they would have destroyed these young surrounding trees in their infancy.

Some evergreen trees in the beautiful ornamental grounds of Mr. Elliot, of Brampton, afford an example of an unusual kind of planting, which was indeed far too expensive for ordinary practice, but succeeded very well. These trees, mostly pines, when twenty feet in height, were taken from the bush in winter time, a large mass of frozen earth, some feet in width, being taken with the roots. They were then transported to the place where they now stand, planted in an excavation suitable to their size, and all vacant places well filled in with earth. It was found necessary to stay them strongly, or the wind would blow them over; but this precaution taken, they throve well, and are now over forty feet in height—magnificent piles of winter foliage.

Mr. Elliot states that, in transplanting evergreens, farmers would, according to his experience, do wisely, to go to the forest or rather to its edge, trees from thence being far the best, in spring or fall; select small plants, one or one-and-a-half feet in height, carry them home by the waggon-load, and plant them close together in rows, in suitable localities, establishing there, in fact, a sort of nursery. These can, then, after one, two or even three years, be planted out to far better advantage than those just taken from the forest. Mr. Elliot also remarks that, in transplanting trees of good size, a very frequent cause of failure in growth was the heat of the sun striking on the bark of the tree at its southern side, which seems to injure the vessels of the bark and of the wood behind it. This can be very well guarded against by protecting the south side of the tree, for a year or so, with a couple of boards nailed in a V shape together.

Mr. William Clark, Scarborough, is of opinion that disforesting has gone too far, and has been for some years doing what he might in replanting.

In his walnut nursery he has three hundred fine young saplings in their fourth year of growth from the nut, averaging about nine feet in height and one-and-a-half inches at the base. In this rich soil their growth is so rapid that last summer alone some of them have thrown out fresh shoots six feet in length. This rapid growth Mr. Clark accounts for by the statement that two years ago, in the second year of their growth, he had with a long sharp spade cut off the deep tap-root of each, thus turning the energies of the tree towards improving its surface roots, which, lying in the richer soil above, send back a better return. Opinions differ. Some say, "take care, above all things, in trees which have these deep roots, to preserve them." It appears to me that their principal use may be to steady the tree, and that where the shelter of groves renders this unnecessary, they may be advantageously cut. It certainly assists lateral growth. The experiments should be tried side by side.

"I think, also," said Mr. Clark, "that my walnut trees thrive better than do those of some of my neighbours, owing to the fact that I sent to Kentucky for my walnuts, while they used the more easily obtainable Canadian variety. These walnuts we will shortly set out in the places where they are permanently to grow. If, however, I were doing it again, I should plant the nuts where I needed the trees, as I consider they are better without transplanting. I must, however, remark that in this small nursery it is easier to keep squirrels away from the planted nuts than if they laid along stretches of fence or other distant parts of the farm. When food is scarce in the woods, the squirrels come to the fields, and there is, though the nut be buried, still an odour which rises to the surface, and informs the hungry squirrel where, by tearing up the soil with his sharp claws, he may find food."

"On a long sharply sloping hill face near by," said Mr. Clark, "as the declivity is too steep for ploughing, and the land is therefore of little use, I have planted horse-chesnuts." These are doing well. They stand about eight feet apart, taking three to go down the hill, being about a hundred in number, and being now twelve feet high, large and spreading, will in a year or two cover the face of the hill with a densely standing wood, valuable as a wind-break, as a shade, and for many other purposes.

Mr. Clark has some hickory trees, twenty years from the nut, now fifteen inches through at the base and forty feet high. These are not the shell-bark hickory, which produces the ordinary hickory-nut loved by the juvenile, and by some who are not juvenile, but the bitter-nut hickory—a variety of nut far less edible. It grows equally well, and its branches are far safer, in many situations, than those of the more edible kind. In shape, when grown by itself, it is taller and less spreading than the maple, the shape of the mass of maple foliage approaching a sphere, that of the hickory, of this variety, an upright cylinder of half its width snd once and a half its height.

Here are some butternuts, planted twenty years ago, of which one row in the damp ground of the lower part of the hill are fast dying, while another, higher up the bank, shows no symptoms of decay. They need, as this experiment shows, the dry ground.

He has also carefully fenced off, scarcely visible above, a long narrow strip of soft and mellow earth, above which rise a row of tiny points of darkish red. "These," he said, "are the soft maple. They are scarce in the bush, and I sowed these this summer; in a year or two they will be fit to plant out. We find almost invariably that the hard maple saplings, easily procurable in our forests, and which we generally use for roadside planting, refuse to thrive and shortly die in the wet places. The soft maple, however, will flourish there, and for this purpose I raise it."

Mr. Clark has planted many trees in this vicinity. He points out one row of maples by the roadside, only three years planted, a full mile in length; they are now twelve to fourteen feet in height and seem to be in every way successful. "Trees I plant," said Mr. Clark, "rarely fail to grow. My method is—in June to go to the bush, select such young trees as appear most fit for my purpose, and, with a sharp spade, cut a circle round the tree, about eight inches from the stem. I tie a string round the tree to know that its roots are cut, and mark a red chalk cross on the south side, to plant it as it stood. I then leave it till fall, when I take the waggon and go for my trees. By this time the summer's growth has started fresh roots inside the circle, and the young tree, properly lifted with a spade, will come up a mass of earth and roots which will cling together, and grow without fail. Some say, cut a rather larger circle when you take them up, to save the little roots that sprout at the ends. This is needless, for the original roots will die back an inch or two, and all new roots will grow inside that. Then, taking all the earth I can, and planting at once after digging, filling up with soft loam, not hard chunks, and mulching well afterwards, the trees will grow if mice and cattle can be kept away."

Not far off is a splendid row of young maples, planted by Mr. Macklin, Jr. These are set out but five years, and have made twice the growth of many for the time. They are twenty feet in height, nearly fifteen in spread, many six inches in stem and present a splendid appearance, extending the full length of the lot along both concession and side lines, as well as forming a long double avenue from the road to the house. The remarkable growth of these trees may be owing to the manner of mulching, which is peculiar. A surface of perhaps six feet in diameter, with the tree for a centre, was covered with pea-straw, and on this a number of stones, so close as often to touch each other, were laid. These at first kept cattle from disturbing the straw, added solidity to the earth, and prevented the roots from being loosened by the wind, and now form a sort of permanent mulch, giving also to the ground beneath them that well known moisture and fertility often observed in stony pastures.

An instance of forest preservation is shown by a piece of hardwood forest owned by Mr. Clark. "About four years ago," said Mr. Clark, "I bought this piece of forest of Mr. Snider, M.P., of Owen Sound, and for about three years I have kept cattle out." As a result of this, on all sides the undergrowth is springing up in its pristine beauty, a yard and more in height—a miniature forest of little stems, half an inch in thickness, at this season divested of leaves, giving us full opportunity to observe their differing varieties of bark, each rich and fresh in smoothness and in colour, as when their prototypes in Eden first sprang to life at the Creator's call. Here is the linden, immortalised by Landor, a darkish olive slightly specked with red; diminutive, faint and numerous upright streaks, marking where in later years the deep indentations shall divide the surface of the great basswood. Here are little beeches, white and blue, but on the surface, the first a smooth and greyish green, the latter redder in colour and already inclined to roughness of bark. Here is the black ash—a beautiful stem of yellow grey—the white ash, dark and smooth like mottled whalebone—the ironwood, a purplish umber, its future bark appearing on the speckled skin, like little wave-marks now; and the elm. Whatever mistakes you may make in the forest, there is no mistaking the young elm—its bark, even when the tree is scant half an inch in thickness, standing out in such full relief, as if a multitude of diminutive serpents, climbing the tree, had been turned to wood in the effort. Here is the hickory, smooth and dark, spotted with reddish dots; and here are maples more than all the rest together.

Mr. Clark observes that "here is ample material for the reproduction of this forest; but look over the fence." There stretches another forest, but how different. There are indeed many trees; high, large, and upright, but with a dying and a spectre look. They are old trees, and there is nothing but old trees. No youthful maples, tall and slender, emulate the growth of the ancient trunks; no reproducing undergrowth surrounds their base. All is bare, a sheer carpet of brown leaves is on the earth; leaves and nothing more. Not a little twig; not an acorn is throwing up its double leaf; not an elm is rising through the soil with its upward and tremulous shoot. All is smooth. When the great trees, surely going, are gone, the forest is altogether gone. How different to this side of the fence. Here is life and the promise of many a life to come; this forest will endure for ever; that, for a few years. Whence is the difference? Cattle have been let in. The owner has fed his cattle on the young shoots of the forest, he has gained a thousand pounds of meat and lost five hundred cords of wood, and he will shortly lose for the rest of his farm that living fertility which the adjacent forest surely gives. "When I came here," said Mr. Clark, "nothing but forest was to be seen; now there is little but field. I was a chopper in my youth, as were my neighbours, but I see what we have done, and I have for years been a planter of what trees, and a preserver of what forest I could."

Near here is the farm of Mr. Rennie, who has obtained a gold medal for the best kept farm of a large district of country. Mr. Rennie tells us that having squared up the edge of a portion of forest, much of it had blown down. This was probably from the loss of the young trees which had grown at the edge, with spreading roots and stems accustomed to the sun. Such trees, encouraged along the border of the forest, are the glacis of its fortification; parrying and turning above the heads of the inner trees the driving winds that would otherwise uproot them from the soil, and keeping the sun from their stems, and from their partially exposed roots.

Mr. Rennie has a thriving young orchard of about a hundred and twenty trees. This is surrounded on three sides by one of the finest wind-break of Norway spruce to be seen. It is over thirteen feet in height, spreading at the base to six feet, the stems five inches—a long, dense, and carefully trimmed hedge of light green—a bright line against the autumn landscape of dark clay ground and far and fragmentary forest. Mr. Rennie planted these flourishing Norway spruces eight years ago in the spring, obtaining the plants from a nursery. They were planted three feet one inch apart, the ground being made, the year before, as soft and mellow as a garden. It is remarkable that where this was not done to a sufficient breadth, and sod had to be turned up, trees did quite as well on the freshly reversed sod.

At the farm of Mr. Macklin, senior, within some miles, are some fine tall rows of tamaracs twenty years old and twenty-five feet high. Some of them, however, are not flourishing. and Mr. Macklin says that he would not advise any one to plant tamaracs except on damp ground. They are likely, he thinks, on dry ground to die. He has here a splendid Norway and Canadian spruce, planted side by side fifteen years ago. The Norway spruce is now over thirty feet in height, the Canadian, twenty, each having a spread of fully twenty feet, and a stem over a foot in thickness. These are on high ground in front of the house, a dark clay loam. Mr. Macklin, jr., is of opinion that something should be done to preserve what portions of bush are yet existing. "I have," he says, "fifty acres of bush land, one of the few bush lots yet left round here, and if there were any inducements given, I should like to preserve it in forest, but it is destined for my farm, and I shall have to clear it. Others are similarly situated."

J. E. Gould, Esq., near Oshawa, states that the country is becoming thoroughly deforested. Near his place, however, still ten or twelve acres remain of the original forest. "Cattle," said a farmer, who in an adjacent field was helping his hired man to saw a great fallen basswood into four foot lengths, "have been kept out of that piece of bush for twenty years."

About ten years back this forest had apparently been culled of many large trees, the rotten stumps of which stood here and there. But it was still a pretty piece of woodland. Everywhere stood the tall maple, the basswood, the ash, the elm—everywhere was the goodly beech, twenty inches—two feet—thirty inches at the base—rising in mighty beams sky-ward, to the branches above; while all around and everywhere between were young trees nearly as tall as they, but at the base only six or seven inches through, ready in a short space to take the place of the larger ones. All of this patch was covered closely with excellent undergrowth, ash and maple, beech and elm, some just rising from the ground, many ten or twenty feet high. There was little sign here of falling timber, the tall undergrowth preventing the thorough sweep of the winds. This patch left to itself might produce timber for ever. This is not however its destiny. Our basswood-dividing friends outside tell us that the owner is about to cut it down and sell the whole mass for firewood.

Along the road in front of Mr. Gould's residence is nearly a mile of road-side maples, twenty feet apart, doing excellently well. Between one and two hundred of these were planted seventeen, the rest thirteen years ago. Of all these hundreds not one has missed to grow and flourish. He describes his method of planting. It was done in April, the trees were taken from the forest by cutting a circle round them, fifteen inches from the tree, through the roots. One man then took hold of the sapling and bent it over as far as possible, while another with a sharp-edged, long-handled spade separated the roots from the ground below. The mass of small fibrous roots being under the centre of the tree—extending, perhaps, eight or ten inches laterally, and going six or eight inches below the surface, it is important to preserve; and in the cutting operation this was, as far as possible, endeavoured to be secured. In planting, a hole three feet wide and perhaps fourteen inches deep was dug, the sod thrown to one side, the earth to another. The bruised ends were then cut cleanly off the large spreading roots, some fine earth, perhaps two or three inches in depth, thrown back into the excavation and the tree stood upright therein. The long spreading roots were never allowed to bend, but were cut off so that they should lie straight. Three or four inches more of fine earth was thrown in and the tree was then lifted and lowered once or twice slightly to shake the fine earth to place around the roots —an operation which was completed by pressing with the hand the earth as closely among the roots as possible. The rest of the earth was now thrown in round the tree, which was placed at about the same level as it had occupied in the forest, and the whole tramped in with the foot; the sods were then scattered above. All these trees, it must be noticed (and it is, in Mr. Gould's opinion, a very important part of the operation) were chopped off to about eight feet in height, many of them having previouly been double that length. Care was taken to cut very slantingly, so as to cast the rain from the top of the stub. No care was taken as to the small branches, as the main dependence is not on them, but on the new branches which will spring out near them. These trees were all planted a little more than a foot from the fence, so that cattle could not press between them and it. The earth was the natural sod, as, so near the fence it had never even been ploughed. About the first of June, a team was sent along loaded with rotten barn-yard straw and litter, about a wheelbarrowfull of which was thrown as mulching round each tree, giving perhaps six inches deep and six feet diameter. This, says Mr. Gould, rots and kills the sod. For the first few years in winter care was taken when the first soft moist snow fell to tramp around these trees. This then froze solid and prevented the mice, whose habit it is to work under the snow, from girdling the trees.

As has been noticed, all these trees grew well, except indeed at one point of low land. A drain was cut through, but did not save the maples, all of which at that point died. Soft maple would have answered here. The seventeen year trees were ten inches, the thirteen year, seven inches at the base, thirty-five and twenty-five feet high respectively, and with very well shaped heads. Some say that bending the roots makes the branches twist awkwardly, and I saw near here a row of maples large and old, which I was told had been so treated; the branches were strangely crooked. The soil here is rich clay loam. It is very observable that the roads drift less with snow where Mr. Gould's maples border it, but for this purpose they would be better closer. A farmer near had planted about the same time and carefully, 150 maples without shortening them. The wind then shook them and the consequent loosening of the roots killed many. The snow was tramped, but not at apparently a proper time, and the mice girdled more. Moreover they were never mulched. There is scarcely more than a dozen left.

Of noticeable trees planted here, the white ash has grown in forty years, fifty feet high, fifty in spread, and two feet six inches at base. Soft and hard maple of the same age are each about sixty feet high, but the hard is but fifteen inches in diameter, the soft full thirty; its head, also, double the size and density of that of hard. This is on land quite dry enough for the hard, in the lawn in front of the house. Elm, basswood and maple sprouts, growing up wild in the fences were trimmed here twenty years back. They are now sixty feet high and eighteen inches through. Second growth pine, self-sown, forty years, will now square nine-inch lumber forty feet in length. A walnut tree thirty years from the seed, is a very handsome specimen, fourteen inches through, thirty feet high and twenty in spread. Mr. French, its owner, advises to plant walnuts with the burrs off, in the autumn, as soon as they fall by the frost, without letting them dry.

A wind-break has been planted north of a house here by Mr. Gould, of Canadian spruce from the nursery, nine feet apart, planted May 16, 1868. They are now twenty-five feet high. All lived and did well, and serve an excellent purpose. Mr. Gould would, he declares, willingly give a hundred dollars for such a one north of his present house. In this instance a mark was made in the nursery on the south side of each tree, and that side replanted to the south. "When I was planting trees," said he, "I offered my neighbours to team all they would need from the bush if they would come and help plant; but they would not. If they had, we should have had far more trees, and their farms would have been worth much more." He is of opinion that trees need no watering, but that stirring the soil on the surface deep enough to kill the sod, but not strike the roots, will give all the moisture needed.

Mr. French remarked that since the woods have been cleared, the springs are drying up, and all the wells which could not formerly be dug deeper than fourteen feet on account of the abundant water pouring in, now are dry and have to be deepened to thirty, forty, or fifty feet.

T. C. Patteson, Esq., Eastwood, Oxford, has some hundreds of acres of woodland, forming a park in Ontario probably unexampled for beauty. It would be valuable to our purpose to note the process by which this has been obtained. It was a region of immense hemlocks, intermingled with many a deciduous tree—hemlocks no longer seen in their original grandeur. Felled for the sake of their bark, their giant trunks everywhere lay prone and dry among the green undergrowth. The present owner is rapidly removing these, clearing away old, unsightly and rotten trees, and opening in all directions charming vistas through the forest. But the trees left here and there, especially on and near the beautiful meadows of rolling land passed in approaching the house, are well worthy of note. Where they have, as many have, been left at distances of fifty or sixty feet from each other, you will see maples, in the summer time immense cones of waving green, sixty or seventy feet high, and fifty broad, their lower branches coming within a few feet of the ground, forming magnificent specimens of what an ornament to the landscape this great tree becomes when given opportunity. There are here, on the meadows bordering the lawns, and everywhere through the great park which the culling mentioned has left the forest, thousands of such trees, intermingled everywhere with beautiful clumps of young hemlocks, perhaps twenty feet high and as many broad, their dark green contrasting richly with the lighter edging with which the growth of this year tips every branch. A drive through these woods, being now mostly, and soon to be altogether, of trees in flush of life and strength, everywhere passing openings where new specimens of forest growth are seen, beech and maple, elm—all the woods, in fact, but the maple predominating—is something to be remembered, and shows how beautiful a park can be made by carefully managing the original Canadian forest. Many pretty glades are here, fit:—

> "For sportive youth to stray in,
> For manhood to enjoy his strength,
> And age to wear away in."

There are numerous young cedars and hemlocks bordering the lawn, planted by Mr. Patteson some six or seven years ago, many of them ten to twelve feet in height. His method of planting evergreens is to take the trees from the forest when very small, say eighteen inches in height, between the 9th and the 19th of June. He has been very successful—rarely or ever losing one.

There are near here, on the road to Woodstock, two plantations of pine trees, about fifty years of age, planted by the Vansittart family. Many of these are now eighteen inches thick at the base, and would each yield a log a foot square of a goodly length: most of them are sixty feet in height. In the summer these plantations of pine near the house form excellent and shady retreats, being perfectly cool in the warmest weather.

Mr. E. A. Powers, Hope Township, Durham, states that the whole country is being very rapidly denuded of wood. It is selling now at $7 a cord, and, an acre of good wood averaging between forty and fifty cords, the right to cut it readily sells for a hundred dollars, after which the land immediately produces a crop and consequently gives a rent. The consequence is that the country is becoming extremely bleak and cold, and much of the fall wheat is annually winter-killed; farmers are taking to coal, and in no long time, if reforesting be not adopted, farmers must depend entirely on the United States for their fuel. "The process of deforesting," says Mr. Powers, "has been very rapid. Twenty years ago there was a square half-mile of forest close to me, and plenty of forest all round, but we all thought that there would always be plenty of timber, and we cleared it up. Now we are beginning to perceive our mistake. I have myself fifteen acres of forest yet standing, but it is pretty well culled of the best timber, and my father and my brother have the right to cut wood as well as myself, so that before our united needs the wood is fast vanishing. I have a field of ten acres in underbrush this side of it, as you see (we were then driving along a sleigh track through the underbrush in question)." Mr. Powers remarks that two slight ravines run diagonally across the field in question, joining within his fifteen acres of bush. This ravine is now dry. "You would not think," said he, "that in this serpentine hollow ran once a babbling brook; but it was an excellent spring creek, fed by living springs at the heads of these little ravines. I cut down the forest, taking care to leave some small trees around each spring, but they proved of no use. As soon as the field was cleared the springs dried up, and retreated within the forest; it is now only there at the junction that I have water. If that were cleared up I should have none. To retrieve the mistake, if possible, I am allowing this field to grow up in underbrush, have kept cattle out for six years, and trust to see it again a forest." The field is now pretty thickly covered with young trees in all stages of growth—maple, elm, birch, basswood, pine and oak—from the young elm, which had pushed through the ground last fall, and just appeared above the surface, to the thriving maple of twelve feet in height: the damp and fast-falling snow enveloping it and its fellows with a fleecy mantle till the field seems populated by grim and sheeted ghosts. "In ten years," said Mr. Powers, "I shall again have a forest here, and I think my creeks again." Near by is an isolated clump of trees at the corner of the farm. "Along here," said Mr. Powers, " I left a wind-break of two acres of thriving forest, birch, ironwood, elm, maple and beech. Grass, however, got in and covered the soil, and the consequent weakening of the trees, thus deprived of their original forest soil, caused many to fall before the wind. There is scarcely half an acre of trees left now, and they are all dying at the top." The cause of this is explained elsewhere. It is generally caused by cattle, who kill the undergrowth—then comes a sunlight and drying up which most portions of the original forest will not stand.

Mr. Lowe, close by, has twenty maples which had been set out in a double row, sixteen years ago, each side of the road to the house. They were saplings about an inch and a half through, the heads were slightly shortened back, not more than eight or ten inches, and the branches as well, they were not mulched nor the snow trampled to keep mice away. In spite of this, however, they have made excellent progress. They are now one foot through, forty-five feet high, twenty feet in spread and with very well shaped heads. This is, however, an isolated case—very few trees with such slight care appear to have thriven. This, as well as the farm of Mr. Powers, is clay loam.

Near here is an orchard belonging to Mr. Foote, the soil of yellow sand, three feet deep, on a clay sub-soil. Mr. Foote has tried for twenty years, but apple trees planted in that soil would not grow well till, four years back, he dug a number of holes four feet in diameter, put a cart-load of surface soil from clay land near in each hole, which it about filled, and planted a young tree in the centre. They did well, and he now has a thriving young orchard.

Mr. Dickson, connected with the management of the Union Cemetery, further on, states that for ten years they have tried tree planting there, the soil being much the same as that last described, but the sand more whitish. They have planted over a thousand trees, but the failures have been so constant that scarce a hundred are left standing, and they do not thrive well. Not much care, however, he thinks, in mulching and protection against mice, has been given them.

As a proof of how little knowledge is general in these matters, a gentleman on the road happening to mention that, largely in consequence of the exertions of Mr. Powers in forwarding the adoption of the by-law, 5,000 trees had already been planted in the Township under last year's Tree-planting Act, on being asked if they had this winter been protected from mice, replied, that he thought there was no necessity as mice would not hurt young maple trees. He had only to go to the next farm, Mr. H. D. Haskill's, to find his mistake, Mr. Haskill immediately taking a shovel, and removing the snow from some young maple trees and showing him where they had been very badly injured by the mice. Mr. Haskill has two hickory trees of the sweet nut variety, grown here from nuts brought from Wisconsin and planted thirty-seven years ago. They have grown nuts for many years, but although so old are of no great size, being respectively but six and eight inches through and fifteen and twenty-five feet in height. It is certain, however, that were these nut-bearing trees, whether walnut or hickory, planted in numbers and closely, they would make far greater progress than in isolated trees. Mr. Powers relates an instance which came under his own observation in Minnesota, a relative of his there having planted ten acres with walnut trees. The field was got into good order and furrows drawn across it six feet apart. The nuts were then sown thickly along all the furrows, and the plants when they came up next spring allowed to remain as close as eighteen inches apart. These trees grew very rapidly, the cultivator being run between two or three times each season to keep down the weeds, and the numerous body of trees in the field acting as shelter to one another. Many of the trees are now nearly a foot thick, their trunks have grown tall, their principal light and heat being from above and the lateral branches being therefore few. The owner has sold, last year, the right to cut every alternate tree, for a thousand dollars, and values the remaining trees in the ten acres at ten thousand.

A thousand feet above Lake Ontario, where the Speed flows languidly among a succession of beautifully undulating uplands, lies the Model Farm, presided over by Professor Brown, in whose hands, among the other multifarious branches of an experimental farm, the important one of arboriculture is likely to receive due attention, since he himself is a European forester of experience, and is the son of Mr. John James Brown, the chief Scottish authority on forestry, and the brother of the well-known conservator of forests of South Australia. Along one side of the lawn runs a shelter-belt of the Canadian balsam, black and white, and the Norway spruce, the three intermingling colours of darker, lighter and bluish green giving a beautiful effect, planted about ten years since, three feet apart, and now a dense hedge of twelve or fifteen in height, giving rise involuntarily to the thought, as one looks across the numerous fields and orchards here in sight on other farms, all undefended from the winter wind, "What a pity that these ten years are lost to all these. A little time—a narrow strip of land—that is all, and each farm and orchard might have had a similar one. Let us hope they will soon profit by the example."

Ornamenting the great lawn in front of the main building are numerous evergreens—Norway and Canadian spruce, Austrian, Scottish and other pines—beautiful masses of pyramidal foliage now, and destined to be better. These, though large trees fifteen or more feet in height, were moved here this spring, masses of roots and earth being brought with them weighing a ton and more. This was accomplished by cutting, last fall, a trench round each tree a couple of feet deep, enclosing a circle five or six feet in diameter. The trench was then filled in with straw, which, while allowing the disc to freeze, kept the frost from its junction with the earth below. In the spring the whole frozen mass was raised with levers and drawn on a sledge to its present position, where an excavation made in the fall was ready to receive it, Nearly a hundred were thus moved and none show the slightest sign of injury. On the lawn many flowering shrubs, classed in their families, are also planted. In the rear of the college, occupying the whole of a broad and far-extending slope of grassy ground, is a plantation of this spring now in its infancy, but destined to be of great ultimate value. Here stand, ranged at proper distance in their several classes, numerous varieties of oak and ash, of elm and maple, of, in fact, all the principal trees of the forest. These are flourishing now, and will, as the year rolls by, furnish valuable examples for guidance in tree-planting throughout Ontario.

Farther on an experiment in foresting, in which all are greatly interested, is being carried out. Here is an acre of young walnut trees, six feet apart each way, only four years since planted in the nut where they now stand, and many of them already seven feet in height, with fine full tops indicative of hardy growth, their long clusters of curiously-shaped leaves shining with yellow lustre in the afternoon sun. The soil is a good clay loam. The trees have grown altogether without shelter, exposed to heat and cold in a region where, from its height, both are necessarily felt to a high degree. This plantation is located in two fields, half on each side of the fence. It is in the shape of a square with a crescent-shaped indentation on each side, so that in each field cattle can find shelter on three sides. In a few years' time this clump will be very valuable in walnut wood alone; and it is evident that, if walnut can be grown profitably in this exposed position, it can in most parts of Ontario.

Some hundreds of yards off is another clump composed of larches, planted on a very gravelly hillside. The distance apart is the same as that of the walnuts, but, as was to be expected from the nature of the soil, they have not advanced with the same rapidity. Failures, however, have been repeatedly re-planted, and they will now average three feet in height. One of them—and one of the most advanced—four feet in height, is planted actually on the edge of the gravel ridge, growing apparently from a pile of small grey stones, among which its roots contrive to find nourishment. This plot is valuable for example, as showing that there can hardly be soil too barren or stony for these trees.

An instance worth noting in growth has occurred near Brantford, where, about ten years ago, in a good loamy soil, an enterprising farmer planted half an acre with pine, spruce, and hardwood trees intermingled. They are now about thirty-six feet in height, in remarkably good condition and form a splendid shelter. On good land in that locality all varieties seem to thrive well—as for maples, the hard on dry, and the soft on wet land seem to thrive whether the soil be rich or poor. "Those trees," says a Brant farmer, planted over a score of years have become fine trees; but like all those grown singly or in belts they grow spreading, not tall trees. The forest in one township here was magnificent, but the greater portion has been cleared. It was unfortunately found that the land, for agriculture, was almost valueless, and I believe that if planted now, it would, in a few years, produce a revenue ten times greater than it now does. We are wont to hear of the great success attained by forestry in Iowa and other Western States. Having travelled through a large portion of that country, I am convinced that if they make it a success, we could make it one ten times greater. On the light soil of Charlotteville, in the county of Norfolk, I have seen walnut trees eight inches in diameter, which had only been planted that many years. Half an acre of native balsam planted here twenty years ago, closely like a forest, are thrifty, and from eight to twelve inches in diameter. Here, near Burford, are two kinds of soil, one being a gravelly subsoil. Trees do a hundred per cent. better on the other."

"A good many farmers," another Brant agriculturist remarks, "have left many oak and chestnut trees standing beside their fields, which I think a great help in preventing drouth."

Near Cataraqui, one cultivator, Mr. John Simpson, has soft maples on stiff clay, sand, sandy loam and loam, and finds they do well on all these soils, but would prefer the loam. He has found the soft or swamp maple to give the most satisfaction, although the timber is inferior to that of the hard maple. They are so much more sure to live and grow so much faster. "Then," he remarks, "Their beauty of foliage, and their lovely crimson flowers in the early spring gives them an advantage over the hard maples." He has a row of these trees which were planted seventeen years ago, and has tapped them three times in the last three years with very satisfactory returns of sap. The syrup made from the soft maple grown on upland is believed here to be of better quality than that from trees grown in swamps. He has planted a great many hard and soft maples, and always expects to lose a large per centage of the hard, while his loss in the soft is trifling. His method of planting is to wait until the ground is moderately dry, dig a hole larger than the roots require and as deep as convenient, the deeper the better, then fill up to within ten inches of the top, placing the tree with the roots carefully spread out, covering with a few inches of mellow earth. Then throw in a couple of pailsful of water, fill up the hole, press down moderately, stake and mulch, and you have a tree that is sure to grow and do well. Mr. Simpson remarked that great mistakes are made in the selection of trees in getting them from thickets. He selects from the borders, always choosing low-set stocky ones, and avoiding the long, slender bamboo-like things, that require cutting off about half way down and then die off after all the trouble. Mr. Simpson intends going into the cultivation of black walnut, of which he has several hundred planted of different ages. He set out in the spring of 1883 over a hundred which have done splendidly, losing but one out of the lot. He has several hundreds more ready for transplanting. Mr. Simpson has, he believes, the only black walnut of any size in the county. It is eighty-nine years old, and seven feet six inches, four feet from the ground. This is an old tree, covering a large space of ground, and is looked upon as a great ornament, bearing large crops of nuts, from which he raises his trees.

Concerning staking, of which Mr. Simpson speaks, many object to it as hardening the bark where the ligature presses, and stopping circulation. A method is advocated of nailing a small board on top of the stake, with a hole bored in the other end through which the tree passes. The tree is got through the hole by splitting the board, and then fastening it together by screws.

Mr. Briggs, of Kingston, remarks, "That in that locality, spring planting for forest trees is generally preferred, unless for evergreens, which do well if carefully removed after spring is passed, that is, when done on a cloudy day, so as not to allow the heat of the sun upon the roots. In clay soil, in this section, where well drained, the hard and soft maple, elm, waltnut, hickory, poplar, oak, beech, birch, butternut, locust, horse-chestnut, mountain ash, basswood, willow, silver poplar, black and white ash, spruce, cedar, larch pines and hemlocks have made rapid and healthy growth, but in similar soil when not drained, after five or six years the trees become unhealthy and stunted. In sandy loam they have nearly all succeeded."

In the part of that district which is as yet well wooded, little planting has been done.

Some rocky points and strips of land, useless otherwise, have, however, been planted with hard maple, which is growing remarkably well.

Mr. Muir, of Grimsby, thinks that forest tree-planting for regulating the climate is not required there as much as in other localities, on account of the many thousand fruit trees and vines set out every year. Mr. Muir gave the sizes and ages of some trees near him as follows:—36 years old in a deep sandy loam, some maples were over 6 ft. round, 3 ft. from the ground, while others were much less; one walnut of the same age was 7 feet round. Some others 26 years old, same soil, sugar maple, 3 ft. 8 in.; locust, 6 ft. 5 in.; birch, 3 ft. 9 in.; silver poplar, 4 ft. 10 in.; pine, 5 ft. 3 in.; ironwood, 3 ft. 6 in. Soft maples planted four years, same soil, are 1 ft. 3 in., 1 ft. 6 in., 1 ft. 7 in. Others on a high ridge of gravelly clay, twenty-seven years old—hard maple over 3 ft.; some of the same variety near them of the same age are very much smaller. Mr. Muir thinks that soft maple, elm, chestnut and walnut will grow much faster than hard maple.

"On high ridge land," remarks a farmer near Sherkston, "the hard maple, walnut, pine, oak, white ash, linden, buttonwood, balm of Gilead and butternut; on the lower lands, soft maple, elm, black ash, birch and tamarack thrive best. In twenty years walnut grows to a foot in diameter, and elm to sixteen inches."

On Garrison Road in this county lives Mr. James McClive, who has paid more attention to tree-planting than most persons in Welland. Some ten years ago he endeavoured to induce the township council to give a bonus for tree-planting, but failed. "Yet," says he, "I planted and am still planting. I have planted over 2000 trees since." Five years ago he planted over two miles of honey locust hedge, with a shade tree in the hedge row every sixteen feet apart; but lately he found that the trees were injuring his hedge, and in consequence was obliged to pull out about 600 beautiful trees. He has a young forest also growing of about 1000 elm and black ash. Mr. McClive affirms that by properly taking up, setting out, and rightly treating after planting 1000 healthy trees, they will live every one. This seems, he thinks, like incredible doctrine, but is nevertheless true, for he has proved it by actual practice. It will even work true in case of three months' drought after planting. The plan of after treatment is to keep the land well cultivated and clean in a circle at least six feet from each tree.

There is nothing will advance trees or plants so rapidly and well as thus stirring the earth round them, not too deep. There is some sympathy—some mutual assistance—science has not yet precisely discovered its mode, but we know its results—between the freshly turned earth, the leaves and roots, which is above all things beneficial to growth. I have known trees cared for thus make *three times* the growth of those left to themselves.

Mr. Wm. Mussen, of near Cayuga, stated that but few trees had been planted in his neighbourhood. He was himself strongly in favour of planting. His method of planting was to dig the hole large so that the roots might have sufficient space, put in fine surface soil first, raise the tree up and down until the fine earth gets in between the small roots, tramping occasionally until the hole is full. Then mulch with fine chip manure or sawdust six inches thick.

Mr. W. J. Kimball, of Simcoe, stated that if he were commencing on a farm again, at the age of about twenty-five, he would embellish the surroundings of his buildings with 300 hard maples. In fifteen years he could begin to tap, and with careful management they would last a life time for sugar and syrup, right at his own door-step, adding beauty and comfort to his home. If one should show signs of decay, make it into firewood—no better grows; then when cut into lumber of proper thickness it is very useful for cabinet ware. It is one of the cleanest trees that we have, not encouraging insects, etc., grows in beautiful form and gains size faster than almost any other, planted directly after the flow of sap, just at the bursting of the bud. Mr. Kimball thinks the soft maple quite inferior to the hard, both in point of usefulness and ornament. Mr. Kimball gave an instance of balsam fir, an acre of which he has known planted many years back. In forty-three years they were beginning to die, it was thought from being planted too close together. They then gave three or four saw-logs each, of one to two feet in diameter.

Another gentleman of Simcoe states that hardwood bush there, cut down forty years ago for the purpose of making charcoal, was succeeded by a growth of pine, the largest of which, trees from twelve to eighteen inches in diameter, have lately been sawn into lumber. Black walnut of twenty-five years is six feet in circumference.

The silver maple, says Mr. Wilson of Petrolea, is not a desirable trees to plant, although it looks well, as the roots run for some distance and sprout up all round. Cedar planted twenty years ago is now eight inches through.

Mr. Maccoll, Cowal, states that in that locality the white ash and elm can be easily transplanted, and will grow on any soil. Chestnut and whitewood require a sandy soil, and are admirable shade trees; so is basswood, which will grow on any soil.

Wherever the white ash flourishes farmers will find it to their interest to set out good sized plantations, close-planted, as directed for growing timber trees. This tree is so useful for manufacturing, and is getting so scarce, that he who has ten acres of it will in a few years have a fortune, if he cares well for his trees.

Mr. King, Middlemarch, planted, in 1855, two acres of soft maple, pine, and a few hard maple. These all grew well, and now are as large as a man's body. Walnut is a fast grower here, and is, of course, very valuable. Maple, beech, ash, walnut, and elm, thrive best on clay loam; chestnut, pine, basswood, and white ash, on a sandy soil. Mr. King says, "In planting I take pains in removing the tree from the earth, by digging sufficiently far round the roots to take it up without cutting or bruising them. If a root is damaged I cut it off with a sharp knife; then I cut off nearly all the top, dig the hole so that the roots of the tree will go in without cramping or bending them, see that the earth is well pulverized and closely packed, then have the tree well braced to prevent the wind from moving the roots; for if the tree is shaken the first summer it is sure death to it. In a severe drought I would water them once a week. Pine, I may remark, will grow on the hardest kinds of clay if properly attended to. It should be planted late in June."

"Over forty years ago," says Mr. Malcom, of Innerkip, tree planting was practised by a few English and Scotch gentlemen in the neighbourhood of Woodstock and Eastwood. The object was to produce groves somewhat in Old Country style. (These groves are referred to elsewhere.) As far as I have noticed, both evergreens and hardwood have made splendid growth. Among the kinds of trees that I have had experience with, two should stand at the head of the list, the sugar-maple and basswood. The maple is a grand tree aside from its noble qualities as a shade tree or fuel tree. It may yet, in the future, yield thousands of tons of sugar from this Province alone. Then the basswood with its broad leaves and beautiful form is unsurpassed by any tree in the world for honey. If we had all our highways lined with those trees it would add a wealth to the Province of which no one has ever dreamed."

"In this soil," says Mr. Shipley, of Falkirk, "a black mould of six inches with a red clay subsoil, an efficient wind-break is easily made by setting deep limbs two inches. in diameter, and seven or eight feet long, of the white willow, which are easily grown." (It should be noticed that objections have been raised to the willow on account of insects which seem to choose it for a breeding place, as well as on account of its roots which spread widely, and sometimes choke under-drains.)

"I do not think," says Mr. Beckton, of Glencoe, "that there is a climate so natural to the production of wood as in Ontario. Forty-three years ago we cut in the original forests oaks over six feet on the stump, black walnut three feet, whitewood six feet, these trees being sixty to seventy feet without a limb; ash, elm and hickory four to five feet. In planting I found pine grow very fast. A large number of low flooded flats should be, I think, replanted."

This gentleman states a point very encouraging to planters, and very true. Trees grow better here than in many other lands. But, both in planting and nurture, trees require more care here than in most parts of Europe. They have a longer summer, and not our scorching heat or freezing cold. European foresters, or European farmers, need here to modify their practice by American experience, which generally takes time to acquire.

Mr. Rennelson, of Dumfries, says: "I have planted many hundreds of trees, usually in spring; but I have one belt of cedars which were planted on Christmas day, 1877, some maples and hickories planted on the 15th of January, and one maple planted in July while in full leaf. All are doing well. I occasionally failed of success unaccountably, yet I would characterize no varieties that I have planted as shy growers except the hemlock, few of which catch, and those which do are almost invariably destroyed by mice at some unexpected time. The watering of trees is a very laborious matter, but when properly mulched there is little necessity for watering. I prepare leaves and rotten wood from the bush for mulching. Strong manure is ruinous. Trees are often injured by twisting the bark from the stem while lifting, and also by leaving a cavity round the roots in planting. Forest trees with prudent care will do very well on a great variety of soils. Mulching I find to be an excellent regulator and modifier of heavy soils. I would, however, prefer a loam. I prefer to lift some earth with the tree, and thus leave the small roots undisturbed, but I would rather shake the earth away than leave a cavity underneath the tree."

Mr. A. D. Ferrier, of Thistledown, has been an enthusiastic and successful planter. He said, "I will briefly give you my experience in this neighbourhood. First of all, when I fixed on the site for my house in 1835, I was determined to save some of the finest forest trees as ornaments round it; so, as I was present on the spot, I got a good many fine elms, maples, beeches, etc., saved, and there they are at this day; many of them as handsome trees as you can see. Then about 1856 I planted a good many, chiefly Norway and Canadian spruce, tamaracs, balsams, maples, and elms, which grew in my garden self-sown from the old ones. I generally planted in tbe spring, as soon as possible after the snow was gone, and always put about a half a pail of water in the hole, and then put in the tree, and generally a mulch of short rotten straw or grass. I always took care to have the ground well fenced, and kept it clean for about three years, and lost very few trees. I once contracted for a hundred trees to be planted in grass, and fully a third died; bul the rest soon filled up the blanks, and many of them are splendid trees now. Most of the hundred were Canadian spruce, balsam and tamarac, with some maples. I got our cemetery here planted in 1863, I think, with Norway spruce, white pine, balsam, fir, maples, tamaracs, and some basswoods, and they, too, did very well as may be seen at this time. The soil is good loam, not very deep, with a limestone bottom. I have some lime trees from Scotland which do very well. The borer attacks the maples and lime trees, and does much damage. The beech trees do not seem to thrive singly, and I find the hemlock very tender. The wild cherry is very pretty and hardy, and a quick growing tree. The maple frequently dies off without any apparent cause. The basswood is a beautiful tree and hardy. I do the pruning myself for the first two or three years, and find it good for the spruces and other fir trees to let the air circulate freely under the lower branches.

"In finishing planting," says Mr. Dredge, of Rockwood, "after putting the soil carefully round the roots till all are covered up, we invariably pile some stones around the roots, which keeps the ground moist, and at the same time gives solidity to the roots of the tree."

"Our soil," says Mr. T. Fraser, of Huron Township, "is principally heavy clay. We plant in the spring very early, or sometimes in the winter months when it is open weather and the planting can be done. With care there does not seem to be trouble in getting any of the trees to grow."

Mr. William Welsh, Amberley, says:—"My opinion of tree-planting is that a uniform system must be employed, according to the wants of each tract of country. For this part of the country, which is level and nearly as treeless as a prairie, I have been advocating the planting of clumps of trees on exposed places, and on the west and north sides of farms; a distance of from two to three rods in width to be laid off for the planting of trees for shelter. This width, if properly planted, I maintain, would be sufficient shelter, that is if properly cared for and a suitable selection of trees made ; say, a hedge of cedar next the road, some of the quick-growing trees next, silver-leaved poplar, whitewood or basswood, or a mixture, then hardwood following (sugar maple being the best we have), but of course the selection might be changed according to circumstances."

Mr, R. Currie, of Wingham, says :—"I do not lose one tree in twenty. Take the trees from the outside of the bush, one to three inches in diameter, fill up with fine earth, put in a good pailful of water and move the tree from side to side so that the earth will get all round the roots. If in sod, turn the grass down and tramp the earth solid with the foot, which, if there has been too much water, will bring it to the surface, and fill up all vacant space around the roots."

Mr. G. Cowan, of Craigvale, says :—"When I was in Toronto I was noticing the men who pruned your shade trees on your streets, and considered it a shame to see such fine trees so mutilated. I always prune mine close, dress the wound, and then paint with white lead, linseed oil, and a little lamp black. This prevents the sun from checking the wound and excludes air and water."

This criticism is well deserved. The pruning and general care of trees in Toronto is very inferior. In the grounds of great institutions, trees will be seen with a succession of ugly stumps up their sides and among their branches, where branches have been cut by ignorant pruners. These of course can never heal, and stand there dumb witnesses to the quality of their caretakers.

Mr. J. Derby, of Crown Hill, says :—"Elms here are infested with caterpillars, which destroy the foliage."

Mr. James Ross, Barrie, says :—"May and early June are best for planting here; trees from one to two inches in diameter, six to ten feet high, with the tops cut off short, succeed very well."

Mr. T. S. Macleod, of Dalston, says that trees would not grow with him on a limestone gravel, although carefully planted, mulched and watered. He finds no difficulty, however, in growing them on a moist clay-loam. He finds second growth maples (maples which had grown in a bush whence most of the larger trees had been removed) much superior to those taken from the regular bush, being stronger, more stocky, and transplanting very easily.

Messrs. Wigle & Son, Ruthven, have 183 acres of good gravelly clay-loam. They are surrounding it with a hedge and planting red cedar and spruce seven feet apart along the side of the hedge to make a wind-break.

"In my own case," says Mr. Mathew Martin, of Tilbury, East, "I encourage the young oak and hickory to grow as shade trees, preferring a tree which would be likely to produce fruit for animals and vermin, thereby saving the grain."

Mr. Marshall, of Allenford, thinks the beech an inferior tree to plant, as it does not seem to thrive when standing exposed to the blasts of winter. Hemlock here will stand the winter winds, and do well on a sandy soil. August and September, he notices, is a very trying time for newly planted trees, which should always, on this account, be mulched for two years at least.

Mr. Robert Purvis, Kinloss, says :—"Maples do well, and the evergreens, such as pine and balsam have been tried, but as they are taken from the bush in low swamp lands, they have not generally succeeded, the greater portion seeming to die. The white ash, for the purpose of planting, is a very valuable tree, makes an everlasting plantation if care be taken of the young sprouts ; grows very rapidly here, and makes excellent timber for a great many purposes. It is becoming scarce, too, in our forests."

Mr. J. P. Macintyre, of Tiverton, stated that quite a number of the elms planted there have failed. He finds that in transplanting them from the forest, elm trees require a great deal of care so as not to injure the tap-root, for if that be injured they do not thrive.

A farmer near Durham stated that he would plant some acres of European larch if he could get them cheaply, but the general nurseryman charges so much that it discourages planting.

The numerous descriptions and statements under the present heading will give the reader, perhaps, a better idea of the state of forestry in our province than any other method. Throughout older Ontario we have cleared the woodland. Portions, larger or smaller, yet, indeed, remain on almost every farm: but too often they are over-run by grass and pastured by cattle—processes entailing forestal death—in the present to the beneficial influence of the forests on the adjoining fields, in the future to the forest itself. (Forest ground, in its natural state, covered with undergrowth, is a deep and extremely porous bed, which holds for a length of time vast quantities of water. But, uncared for, open to cattle, sun and air, the solidified and grass-covered earth no longer forms this valuable reservoir). In some places more care is taken, but these are the minority. What tree planting has been done throughout the province consists chiefly of lines of trees, generally of maple, here and there along the road-side, or as protection to a few out of many orchards and farm-steadings. For this purpose they are valuable, though evergreens would be infinitely better.

Let us say a word here in favour of planting the Canadian pine. Planted as wind-breaks, wherever I have found it, it has been effective and thriving, and after thirty years, showing no gaps. In groves it does better than maple, though that does well. Those who care for trees near residences might well choose the pine, for of all trees it is the one most conducive to health—its resinous exhalations purify the air; there is beneath the sun no such atmosphere as that of the pine forest. It is, too, for those who love the beautiful, and pass through life rather observing the flowers than the thorns, pleasant to see on nights when all around is frost and snow, the bright light from door and window, against the sheltering wall of adjacent branches, illuminating, with beautiful gleams and shadows, a thousand ever changing hollows and waves of dark pine foliage, till it fades away in glimmering dulness towards the distant road.

To remedy the present state of affairs, it is most urgent that simultaneous efforts be made in three directions. First, to plant wind-breaks, evergreen where possible. Next, to care for, enclose, and preserve what portions of forest we can yet retain upon our farms, where they are not already too advanced in decay. Few who own these stores of timber are aware how valuable they will be in the near future. Next, to commence plantations, of which, in Ontario, there are as yet extremely few. It is in the power of every farmer now, at slight expense, to plant a five-acre patch of white oak, walnut, ash, or hickory, which will, ere long, be as valuable as five times as much cleared land. And to encourage those who choose to adopt this course, it cannot be too often repeated that they need not limit the possible by visible growth. Carefully planted, judiciously pruned, and frequently and lightly cultivated, trees will grow three times as fast, and look three times as well as those specimens, planted in haste and left to live or die, we view standing in uncared-for loneliness, here and there along the roadside path.

Years ago we suffered the inconveniences of living in a country full of trees. To remedy this, we went to work with such vigor that we should have soon been suffering those of living in a country destitute of trees. But there is yet time. The trees we still have will give a breathing space, if cared for, till those we plant can grow; and if Ontario move but half as energetically in the matter as some of the States are doing we shall leave many a broad plantation to those who follow us.

Mr. Henry Doupe, Kirkton, mentions that about fourteen years ago, in the month of October, he planted a score of spruce and balsam near his house; all grew and did well and are now about twenty-four feet high. The plants were brought from Egremont, a distance of sixty miles. Spruce and balsam planted along the road side would look well, he remarks, both in summer and winter, no cattle grazing on the roadside would meddle with them; soil, a deep arable clay.

Mr. V. E. Buch, Ottawa, says "I have myself raised numbers of trees from seeds and nuts. Had I a few acres instead of only a few city lots, I should certainly have started a forest of my own. That trees will live and thrive with little attention is, from the experiments I have made, a patent fact—and you may be sure that there is no trick in reclothing this country with wood artificially within a very few years if it was thought desirable to do so. I have butter-nuts ten years from the seed that are thirty-four feet high, and two feet three inches round, one and a-half feet from the ground. The branches of one tree spreads thirty-three feet, and it began to bear nuts at seven years old; this tree is grown in grass and was not pruned with a view of making timber. The butter-nut is the most rapid growing tree we have hard for a wood tree. I have the *acer nagundo*, box elder, ashleaf maple, or Manitoba maple—it goes by all these names—eight feet high; it is not yet two years old, whilst my two year old black-walnuts are only three feet high and the horse chesnut seven years from the seed, is twelve feet high. Its sap is suitable for sugar. During the first year's growth of these seedlings every leaf and twig was allowed to remain, but the second spring all side shoots were trimmed off and the trees ran up in straight rods; this is evidently a most desirable tree for clothing our western prairies, as it is a native of the soil; but whether it is as desirable as many other sorts, I have personally no means of knowing; it seeds most profusely, and there is certainly no trouble in getting them to germinate. For my own part I look upon the difficulties of reclothing our forests with life as so many myths for idlers. Every one who has made any effort to reproduce timber has been well pleased with the success which has attended the effort made; any lover of nature must receive ample compensation for all his trouble, and those who plant for a money reward will be well repaid for all the labour bestowed on them. I should have stated that I have black walnuts two years old, three feet high, and ten inches round; it is a comparatively slow-growing tree. Some of the poplars and willows grow much faster than these, but are raised from cuttings. Where wood is required speedily, as it is in the North-west, poplars and willows should be set in alternate rows, and alternate trees, with hard wood varieties, if required for home fuel use; if for sale, they should all be grown, every species by itself, in nursery rows."

Mr. Ballantyne, of Ottawa, gave some experience in planting on a sandy loam with a clay subsoil, natural drainage not very good. Saplings taken from the forest, swamp maples seven feet high, nine years planted, now thirty feet, and six inches through. Poplars, several varieties, grew very fast, and will make a wind-break in far less time than the maple, particularly the Balm of Gilead poplar. They are, however, easily broken by the wind, and are apt to get foul with suckers. Flowering maple, sowed in 1875, transplanted in the spring of 1876 when about four or five inches high; some of them are now nearly thirty feet high. Next to the poplar the red cherry is the fastest growing tree I have tried. Pines planted three feet high, in six years are twenty feet in height and six inches in diameter, Swamp elm seven feet high, planted in the fall, is in six years sixteen feet high; although making such slow growth this is quite thrifty. White cedars grow well but slowly. Balsam, spruce, hemlock, and white spruce, all grow well. I have rarely lost a tree in planting. In setting out the trees one of the main points is to bring the earth and roots into close contact.

Mr. Checkly, North Augusta, states that "several attempts have been made to replace sugar bushes, but in nearly every instance the attempts have proved failures, owing, I feel satisfied, to lack of proper care in tree planting, and proper care on removing the trees from their natural places of growth. I have planted a great many trees myself, and have found from my little experience of about eighteen years that hard maples taken from sandy soil do not do well on clay or rock land, and that those I took from the same quality of soil as that where I set them grew well; but soft maples have succeeded much better on our home clay and sandy loam than the hard maples. I have transplanted besides the maples, water elms, pine, white and black spruce, birch, hickory, basswood, and cedar. I have known better success with elm and basswood than with any of the others. Directly opposite my place there is a row of hard maples that have been planted about twenty-one years, and among them is an elm larger than any of the maples, although planted the same time and growing vigorously, while the maples are beginning to decay, and some of them may be removed at once. Fourteen years ago I planted twenty-four maple trees and a number of spruce. I took every precaution in removing the maples to carry away as much earth with the roots as I possibly could, and selected the trees nearest the clearing because they were better furnished than those growing thick farther away; I marked the north side and set it to the north again, and to-day I have but one maple alive, and it is a soft maple. The soil I planted in is clay loam. There is another great drawback in planting, and to insure success must be attended to, and that is mulching; the ground must be kept moist, to secure a growth. Nature has supplied mulching for the forests in the falling of the leaves, and I have always found that sugar bushes used as a pasture invariably die out, while those that are not pastured and allowed to grow up to underbrush thrive the best and are not affected by drought. With regard to the clearing up of the country, affecting the rainfall and drying up streams, it is doing both. I remember distinctly, where the mowers and reapers are now used, seeing water stand all summer when the land was in a state of nature, and the stream that runs through the village where I live shows signs of the supply being cut off, which it received in former years from the great swamps along its course that are now cleared up and under crop. I am sorry that more has not been attempted before now in the way of tree-planting, as our noble forests are fast becoming things of the past, and owing to the country becoming so cleared up, the wind and drought together will be great drawbacks to success in tree planting."

Mr. Checkly's remarks concerning sugar bushes dying out where cattle run are worthy of careful notice. A *portion only* of each wood-lot should be left for cattle. The twenty-three maples which died must, I think, have been ill-drained. The soft maple lived; wet land would not injure it so much.

Mr. G. D. Platt, Picton, remarks that in some instances maple orchards have been planted in that locality, and thrive well.

Mr. W. Windatt, Darlington, observes that "about the second or third year after planting trees, if there come a very hot spell in July or August, the leaves become scorched and the trees die. This happens most frequently in hard clay. Perhaps more care in planting or mulching might obviate this. I am aware that sufficient pains have not been taken in planting, the general practice being to dig a hole big enough to take the roots, plant the tree, put in the earth and give no further care to the matter."

Mr. James Keays, Russell, remarks that in his experience, the silver maple is one of the most rapid growers, and if pruned well the trunk grows large and high.

Mr. R. Osborne, Newcastle, observes that hundreds of trees are planted every year, of which not much more than twenty-five per cent. grow, but if properly mulched and staked the first year, nearly all would grow.

Mr. W. C. Switzer, Emily, states that his opinion of planting is, for maples, take them from soil as much as possible like the soil you are going to plant them in. As soon as the weather gets warm in the spring after planting, put some long manure or wet straw round them with a few stones on the top, and there is no mistake about growth.

Mr. William Harrison, Mackville, remarks that over twenty years ago he planted a belt of evergreens as a wind-break for his orchard, of pine, spruce, balsam and hemlock. This has answered well, and he has every reason to be satisfied with its thrifty appearance.

Mr. W. Ditchburn, Rosseau, remarks that in that locality maple, beech, and red oak require a deep soil. Soft maple, basswood, or lime, black ash, black and white birch, spruce and white oak, thrive best on flat and wet lands.

Mr. Henry Westney, Highland Creek, planted in the spring of 1883, twenty-five thousand young forest trees, choosing for that purpose ash, elm, pine, fir and spruce. He finds but a small per centage of loss on any of these kinds excepting in the firs, of which but two hundred grew out of one thousand planted. The wet season of 1883 was, it may be remarked, very favourable to the success of newly planted trees.

Mr. John Gibson, Markham, says : We have a number of trees, which, with careful planting, grow easily and very rapidly. Of these the European larch is about the foremost, though the tamarac, maple, ash, cedar and Canadian pine, with a fair mixture of poplar, in a very few years give good protection and a profitable crop. As to the time of planting, I have found about the first of June to be quite early enough.

Mr. B. Gott, Arkona, a part of the country rejoicing in a rich sandy loam, excellent for growing trees, especially seedlings, has carried out some very valuable forestry experiments. Here is a half-mile wind-break of the Scottish larch, now twenty to twenty-five feet high, and ten or twelve in spread of widest branches. These larches grow, as all trees seem to do in this soil, with remarkable life, and the line of foliage—a foliage composed of multitudes of long filamental festoons of refreshing green—swaying resposive to the afternoon breeze, forms a picture to be remembered. These have been twelve years planted, using plants of two years' growth. These were planted as early in spring as the frost would permit, as the larch is among the earliest trees to start into foliage. On high, dry soils, where there is no danger of heaving from frost, fall is preferable. It is well to sow the seeds early in spring, transplant the next spring, cultivate two years, then plant permanently six feet apart.

Near by is a block of young trees, on the one side the dark Austrian, on the other the more light and azure-tinted Scottish pine. These have been planted eight years, with two years' seedlings and treatment similar to that of the larch. Mr. Gott considers that the best wind-break of these would be in double rows interspersed Austrian and Scottish, ten feet from tree to tree, and the rows six feet apart. This is at right angles with the larch wind-break previously mentioned, and such is the influence of these wind-breaks on that large part of the grounds controlled by their shelter, that it seems in winter a different climate from the rest. There is a total absence of cutting winds, and work is possible and is performed, which would, in the unsheltered parts, be out of the question. When we consider with how little labour and in what a comparatively short time these excellent wind-breaks have been grown, how valuable the purposes they serve, how beautiful their appearance, and how greatly in both respects they would enhance the value of any farm on which the example here noted was initiated, it is a matter of regret to observe that many of the farms around, which had some time been spared in the matter a dozen years ago, might now have been well protected by beautiful wind-breaks of the same class, are yet undefended from the wind and cold, and, as the small remains of forest near them are cleared, will become more and more exposed to their assaults.

Here are also some fine specimens of Canadian white pine, forty feet high and twenty wide, close grown, thriving, and not having, indeed, a weak branch on them. These, when seedlings three feet high, were taken up from the forest and planted in blocks of three in a block, in the latter part of May. Mr. Gott remarks that he prefers to plant, on dry soil, a little deeper than the seedlings stood in the forest, say a foot deep. But it will by no means answer to dig only the depth you wish to plant the tree, as that would leave the trees standing on the hard subsoil—that also must be carefully dug, and the tree then put in, with care. By the way, always put in some of the best surface soil around the roots, and to work it in by hand, if time allow. "And if Time did not allow," remarked Mr. Gott, "I would do it in spite of him."

This subsoil digging, it must be remembered, would not answer in tenacious clay, unless a large area were so dug. To do it at each tree site would often be to create water holes. On the other hand, so that the water can get away, nothing can be better. But in deep sandy loam it is safe ; that has a natural drainage.

Near here, on the same soil, is an instance of the ill effects—in fact, of the waste of time and money—of less careful planting. Two hundred trees were bought eight years since, and planted hurriedly in half a day, the precautions mentioned above, of course, not being taken. The result was, as might have been expected, very unsatisfactory. Here have been large losses of trees yearly, which had yearly to be replanted, while those which remained have never made a healthy growth. Ten dollars' worth of time in planting would have added five hundred dollars' worth to the value of the farm to-day.

Here are also some fine cedars in hedges, twelve feet high, planted eight years, six inches apart, three feet six inches high—planted late in May. Set closely, thus, these are excellent in hedges—in fact, are among the best hedge-trees we have. (Cedar loves a moist soil; but a spreading cedar wind-break, by its close shading habit, covers the ground, retains the rain in the ground, condenses moisture in fogs, retains it and does much to make the soil it covers a fitting soil for itself.)

Mr. Gott remarks that, instead of mulching, he cultivates, and thus keeps the ground clean from weeds and mellow with working, near his trees. This is, of course, the best calculated to aid the tree in rapid growth. The other, mulching, is only the next best. He also states that many have failed in transplanting evergreens by want of thought. "They take them," he says, "from a deep sand where their roots may be four feet long, take what sized root will come and plant it in a clay loam. The demand for sudden change of habit is more than the tree can comply with."

Mr. Saunders, F.R.C.S., of London, has a remarkably efficient wind-break, planted by himself fourteen years ago. It is of great length and consists, first, of a hedge close to the road, of the Osage orange and barberry. Six feet inside of this is a row of silver maples, six feet inside again a row of Scottish and Austrian pine, and six feet again inside a row of Norway spruce. The trees stand ten feet apart in the rows. The soil is clay loam. The planting was done in May with nursery seedlings eighteen inches high. The trees are so planted as to break the openings. No wind-break is more beautiful than one so arranged. In summer the dark and light greens of the evergreen and deciduous trees afford an agreeable contrast, while in the fall the heavy masses of the pine trees are brilliantly outlined on the wall of crimson foliage behind.

Not far off, in another quarter of the city, Mr. Saunders has hundreds of fine young trees in excellent growth. Here is particularly to be noticed the Norway maple, planted only eight years, yet twenty feet in height and twenty in spread of branches. This tree is admirably adapted for shade or for a wind-break, from its peculiar habit of branching. Its branches are thickly set, and all full leaved on the inner as well as on the outer portions of the tree. Its lower branches grow close to the ground, a shape purposely procured as, of course, no wind-break where the air rushes through below is at all so efficient. The shape is obtained by planting one year seedlings in nursery rows for two years, and then transplanting them again to their ultimate positions. A large, closely fibred, root is thus obtained, easily transplanted, and able to nourish whatever head may be on the stem without cutting back. Forest saplings, on the contrary, which are generally taken from six to ten feet in height, send out branches high above the ground, and do not, of course, make nearly so efficient a wind-break. Here are also some magnificent specimens of the cut-leaved birch, eight years old, tall and graceful, its deeply serrated foliage resembling draperies of admirably designed lace, while the evening breeze, perpetually changing the arrangement, still presents new and fanciful arabesques to the view. Near here in the asylum ground is a double line of American elm, planted but thirteen years, yet fully forty feet high. The road passes between. It is a fine avenue, and had double the space been allowed between the lines of trees would, in time, have been a noble one. The planters were not apparently aware with what liberality nature would have assisted their work.

WIND-BREAKS AND SHELTER-BELTS.

In the application of forestry to farm purposes, this branch is one of the most important, especially in Ontario where, in many parts, we have carried to so unwise an extent the clearing of the land. In many districts which I remember heavily clothed with forest—in many more where I can recollect the forest cleared as far as it should have been cleared, that is to say, 30 per cent was yet woodland—there exists now both in one case and the other, vast extensions of cultivated land, broken here and there by a straggling patch of decaying forest, abandoned to the tender mercies of the cattle—here and there by a mile or so of young trees along the road. But the forest is virtually no more, all is swept by the bleakness of the winter storm ; all is dried and scorched by the summer wind and the summer sun. It is in such districts that the planting of wind-breaks would be found peculiarly valuable. Much evidence, in fact, with regard to their value, will be found from correspondents on other pages. It is but ten or twelve years and a little labour, and your now exposed and wind-swept farm may be surrounded by impervious walls of beautiful and living green. For this purpose, for instance, the cedar will thrive on many soils. It is true, it is naturally a native of the lower and moister localities,

> "From the hollow oak loud hoots the owl,
> From the cedar swamp the gaunt wolves howl."

But here is the peculiar strength of forestry—that it possesses often the power of, not bringing its soil with it, but of improving a soil for itself. If you look at this tree in the forest, you will find it flourishing best on moist, sheltered deep soils, often, but by no means always, rich. But you will see at a glance one main characteristic, it loves to shield its stem. Even in the dense bush its branches lean downwards towards the ground, sometimes they nearly touch it. But we plant, when young, our rows of little cedars ; their branches soon shade stem and ground around ; they grow up in the field habit, *i. e.*, they shield themselves by bushy branches far more than in the woods, and with care in a few years we have a dark, dense wall, a long, extended cone, its height fifteen feet, its breadth on the ground perhaps twelve, and to be twenty. The lower branches will be close to the ground, all below will be always dense shade—spring, summer and winter, the mass of leaves are there. The rain-water falling through the tree, the dew which its leaves distil,—for all trees are alembics to distil as well as evaporators to throw off—all falls below, where neither sun nor wind can get to dry it. The ground will be always shaded and damp, and thus the cedar will have made the soil it loves best from the soil it loves less.

Then there are the spruces—Norway and Canadian—nothing can make a more beautiful wind-break than their long lines of mingled dark, light, or bright bluish green. They stand trimming well ; you can slope the face as you choose ; but remember that these are not hedge plants ; do not trim them too closely ; it is a wall of trees you want. I have known trees of this class clipped to hedge size, and for a few years make a pretty hedge, then turn brown and die.

Then there is the pine—Austrian if you like, or Scottish ; either will form a solid wind-break, but I prefer the appearance of the Canadian pine. When we look at the grim, heavy branches of the Austrian, one is at no loss to think why its home was called the Black Forest, the known haunt of many a robber chief, the reported one of many an evil spirit. One can well fancy the terrible Wehr-wolf emerging to slaughter, from its dark, cavernous shades, or its dark branches overhanging the water-side and shading the whirlpool where the treacherous fiend of the Lurlei successively fascinated, and successively slew. Its Scottish namesake, too, is of wierd and gloomy appearance. One may imagine it well as forming the old Glenfinlas shades,

"Where walks, they say, the shrieking ghost."

Our Canadian pine, though of hue more sombre than either, yet bears, to my mind, forest verdure of more pleasing form. Its straight branches stand firmly like its trunk; but the massing whorls of its long needle foliage wave freely in the wind on their flexible stems. Underneath is always carpeted with clean red brown needles; always around it seems to me a healthy air. We have this, too, in Ontario, in wind-breaks forty years of age, and know it a success.

Then there is the Scottish larch, which, described elsewhere, makes a wind-break of rich light-green and fanciful lanceolated foliage. It is the link between the deciduous and the evergreen; its leaves indeed fall, but stay long and return shortly.

Owing to the difficulty of transplanting evergreens—a difficulty which, as explained elsewhere, is, if care be taken, much more apparent than real, we seem likely, throughout Ontario, to have many more deciduous than evergreen wind-breaks, the maple being largely used. The chief objection is that in winter, when it is most needed, the deciduous wind-break is least effective. On the other hand, these hard woods give excellent shade, and in the case of the maple will yield sugar; in that of the elm, perhaps the best and toughest second-growth wood that can be used on the farm. But with maples and such trees, they should be planted small, and growth of buds near the ground encouraged. —the top may, if chosen, be slightly cut back to assist this. With evergreen, larch, spruce, balsam and pine, you are tolerably sure to get a low growth, with the others not so sure; if not cared for they are apt to have clear stems eight to ten feet high, a great loss in wind-breaks, which should be, as far as they may, impervious. For this purpose such trees as the Norway maple are excellent; its thick, dense, low habit of growth gives perhaps the best deciduous wind-break. If we want one effective in a short time, there is nothing so quick of growth as poplars, silver or Lombardy. But we must remember their habit of throwing out suckers. From some following correspondence, it will be seen that, wherever wind-breaks are planted throughout Ontario, they have proved very beneficial to the crops. One or two writers remark that though very valuable to the field generally, they have proved injurious to the crops close under the shadow. This will be most likely to be the case on the north side of such a strip, and, where this is feared if, instead of grain, a narrow strip of grass be cultivated there, I have found it pay as well as the rest of the land.

As will be found from instances elsewhere, the farmer who has protected his property with these wind-breaks has changed the climate of his farm. It will no longer be windswept, the grass will grow earlier and remain later, the cattle will not need such lengthened housing, nor will the drying winds of summer so soon take the moisture from the ground. It adds, too, not only greatly to the value, but greatly to the beauty of the farm. Frequently, in passing through the country, on seeing few and far between, a beautiful wind-break of this class, the pleasure of beholding it is mingled with regrets that the time has been allowed to pass—that the dozen or fifteen years that it took to create this admirable production had not been employed by the owners of numerons farms in the vicinity in procuring as efficient and as beautiful protection for their own.

The following statements give the effect of wind-breaks where they have been established throughout Ontario. They are from the Township Clerks of the various localities, gentlemen who are well informed of the progress of the adjacent country.

Dawn.—When fall wheat is protected by the woods around, the frost does not seem to hurt it nearly so much as when out in an open field. Both fruit and crops thrive better where thus protected.

Esquesing.—I have myself observed the beneficial effects of planting trees closely for shelter as a protection to fruit and grain crops.

Burford.—Wind-breaks are very beneficial, but when grown take about all the substance from the soil from two rods on each side. Nevertheless, they are grand for sheltering fall wheat and clover.

Blandford.—Have observed great benefit from such shelter. Have seen fine crops of fall wheat and clover sheltered by belts of timber from the west and north winds, while in more exposed situations such crops were comparative failures; also consider such shelter of great benefit to orchards; the trees seem to thrive better when so sheltered, and the more tender varieties can often be successfully grown.

Mersea.—Where fields and orchards are sheltered, especially from the east winds, the effect is very marked. Where—as here—the snow-fall is light and generally of slight duration, fields protected by the forests produce much the best crops of wheat, and the orchard derives a like benefit.

East Flamboro'.—The effects of trees planted for wind-break, or shelters for fields, especially west winds in spring, so far as I have observed, have proved beneficial to crops in general.

North Easthope.—The experiment of wind-breaks here has been good, especially in the matter of orchards.

Minto.—Fruit, grass and crops thrive the better for wind-breaks.

Dorchester.—Have observed for a number of years that fruit and fall wheat do better where they are sheltered by trees.

Moore.—The benefits resulting from belts or wind-breaks may be seen any season, almost, in the improved condition of winter wheat, compared with fields in exposed situations where the cold, biting winds have unrestrained sweep. Fruit trees also thrive and bear better, grass starts sooner in the spring, and stock have shelter in cold weather and shade from a scorching summer sun.

Dummer.—A natural growth of cedar, pine, elm, etc., has grown up along some of the fences close enough for a wind-break. Fall wheat and fruit trees are decidedly benefited by such shelter. I cannot say with regard to spring crops.

Egremont.—Had a field of wheat this summer in which a few maples were saved when cleared; these have grown bushy and very beautiful. I noticed that the wheat was heavier and plumper around these trees than anywhere else in the fields.

Glanford.—Where wind-breaks have been grown the orchards and crops sheltered by them have been greatly benefited.

Grosfield.—Last year wherever wheat was sheltered from the west winds it was good; where not sheltered it was all destroyed.

Crowland.—There is no manner of doubt that wind breaks are of decided advantage, inasmuch as it prevents the fields from being denuded of the snow, which serves as a covering for all that may be committed to Mother Earth, the good effects of which I have demonstration of every year.

Oxford.—Wheat, and all fall plantings, peach and other trees, are very much benefited thereby. Such wind-breaks are becoming more in use yearly.

Tilbury East.—Planting here is only in its infancy, but it is observed that the fields farthest from the bush fare badly in the winter and spring under fall wheat. Indeed it is very questionable if fall wheat could be raised profitably in this section now the whole country is denuded of forest or threatened to be.

Rochester.—No wind-breaks planted, but bush on the north and west of growing crop has a markedly good effect.

Euphrasia.—Wind-breaks eventually become both ornamental and useful; grass and crops do not so much require wind-breaks as fruit does. In many fruit-growing sections, the apples especially are blown off by wind before fully matured for want of proper wind-breaks; this I look upon as a great evil, as Ontario can raise fruits well, and there will be a great demand in the North-West as well as in England.

Harvey.—Where the crops are sheltered by the forests it preserves them by keeping the snow on later in the spring. Out in the clearance the wind drives all the snow off, leaving them bare, only around the fences, and common sense will show the necessity of wind-breaks and shelter even for the cattle as well as orchards and grain crops.

Stamford.—Wind-breaks are always beneficial, particularly to the apple crop. Close to trees that are growing in the live fences, however, grass and crops do not thrive.

Canonto.—The effect of some wind-breaks planted here can be seen by the merest tyro, so much so that people are beginning either to plant or leave saplings as they clear their land.

Colchester.—Where the natural forest has protected farms on the west and north I have always noticed that the crops have always looked and been better than others in the same locality not so protected.

North Gwillimbury.—A precisely similar statement.

South Gwillimbury.—Have observed, and heard also from those owning wind-breaks, that they are a wonderful help to growing crops as well as orchards.

Canboro'.—Have one field sheltered on three sides by bush. On that field I am sure of a crop of fall wheat, while on land not sheltered by trees the crop is sure to be heaved by frost as the snow blows off, and nothing is left to protect it.

Osprey.—Have an established wind-break round my orchard, and the effect is that the trees are sheltered from the severe winds in winter and spring, and that the apples are not so liable to be shaken from the trees in fall; but the break is of poplar, which must soon be cut down as they have completely filled the orchard with a network of roots and young shoots. (As repeatedly stated elsewhere, the poplar is a very valuable tree for many reasons; but great care must be taken to put it only where its propensity to throw out suckers will do no harm.)

N. Cayuga.—Know one or two wind-breaks that have grown up naturally, and have observed that the fields were sheltered thereby to a distance of twenty rods and upwards, and both grain and grass, where so sheltered, have thriven better. Have not had an opportunity of observing the effect upon fruit.

Willoughby.—Few have planted wind-breaks, but where they have I have no doubt that the result is better, especially on fall wheat, clover, and fruit of all kinds.

Laurel.—Know one grove along the north side of a lot, and near this grove the vegetation is much more rapid in the spring, and much more early. Also, the crops attain there a much greater growth. The most useful trees for this purpose are the balsam, spruce, pine, cedar and hemlock. I have one of balsam, spruce and tamarac around the north and west sides of my orchard, which have been planted about twenty years; and these break the wind so that the storms in the autumn do not shake the fruit from my trees as from those of my neighbours.

Bruce.—No wind-breaks planted out that I am aware of, but wherever the crops are sheltered by what remains of the original forest, the prevailing opinion is that they thrive better. This refers more particularly to winter wheat.

Down.—Many farmers have planted trees, especially along the western side of their farms, and the change has been very noticeable in the sheltering and protection of fall wheat.

Amabel.—It is well known to every farmer here that land sheltered in the winter season is more favourable and surer for fall wheat than unsheltered.

Eramosa.—There are several who have established wind-breaks; though the trees are not planted very closely, and in every instance under my observation the effect is beneficial, to grain crops especially, in sheltering from parching winds, and encouraging more heavy dews. (This is a point not to be lost sight of. If you pass by a row of pines in a heavy mist, you will find it almost raining under the pines, almost dry elsewhere.)

Caradoc.—A few have planted pine, and a good number have planted willow for this purpose. The past winter, to a greater extent than formerly, proved the utility of forests in shielding crops, as the wheat in sheltered situations invariably proved superior.

Adolphustown.—Where protected by wind-breaks, fruit, grass, and crops in general most assuredly thrive better.

Colchester.—There are no persons in this locality who have planted trees for wind-breaks, but many have left strips or belts of timber along the west boundaries of their farms; and wherever this has been done it has proved a great benefit, especially for fall wheat. In the instances where timber has been so preserved the owners would not have it destroyed on any account, which is a good evidence that it is of advantage.

Oneida.—There is a large growth of poplar trees growing on the line between myself and my neighbours on the west side, and I can now raise good wheat on an exposed knoll where I could raise very little before.

NEW FOREST PLANTATIONS.

We can point to very few plantations of trees in Canada of such age as to be useful for examples. A few will be found under this heading, obtained in various parts of the United States. It will be seen by observation of these examples, and, in fact, by reference to nature itself, that in starting a plantation of trees, in most instances it is well to mix the trees. Then there is a point in drainage to be considered. If we can, with a subsoil plough or otherwise, deeply cultivate the whole area of ground, it is all the better, and better still if done the year before. But if we are digging for each tree separately, we may dig in a light or leachy soil as deeply as we choose; not so in stiff clay, the water may lodge under the roots (unless, indeed, it be underdrained). The next thing to be considered is, that if we plant our young trees so as to shade a great deal of the ground and to shade one another's stems, they will grow all the faster. With this object it is well always to plant many more trees than we intend ultimately to remain there. Now, if we can mulch all the ground for our plantation, we can plant our trees as thickly as we like; but if we intend to assist our trees by cultivating the ground around them (it may be done with a crop, and often is so done), we must leave room for our cultivator between the rows. An artificial forest, planted and grown for the production of tall, straight clear timber, is a very different thing from our natural woods. In it the trees are planted as closely as experience teaches they will stand and thrive, giving each tree sufficient room for its branching top to extend, and no more. Such a forest does not need, as does the natural forest, the protection of undergrowth below to shade its soil, its roots and trunks. Its own close-set formation gives shade in every part. The outside trees will branch to the ground—the inside not.

In all efforts at tree culture, it should be remembered that, though we look to nature as our original guide, yet experience teaches that, with our assistance, productions may be secured infinitely more valuable than we would otherwise have obtained. The wheat plant exists in nature, but not the wheat field. It is so with trees. If we plant them and no more, they may grow or may not. But if we care for them, they can not only be made to grow far more rapidly, but they will grow in the peculiar manner, and yield the particular kind and class of timber we intend, just as certainly as the grafted orchard will bear the grafted fruit. Suppose, for instance, that we desire a closely set forest to grow us long, straight trees, fit to yield clear beams of either hard or soft wood, we must plant the trees at proper distances, thin them at proper times (the eye can easily tell when), always remembering the principle of keeping the ground well shaded, and keep the surface ground stirred and cultivated, taking care not to hurt the roots, which roots we will find will almost seem to be watching us and to know what we are about. If we give them the habit of having the ground lightly cultivated, we will find some inches of earth always left for that purpose ; (and there is nothing that more benefits a tree.) Trees, too, bring their own manure ; they draw much nourishment from the atmosphere and from the rain ; they drop it to their roots in falling leaves, which should neither be carried away nor blown away. But in speaking of a plantation where we can cultivate, cultivation will mix the leaves with the mould, and it will answer far better than the natural plan. Nature does not need a tree as soon nor as free from knots as we do. The next thing to consider is how to avoid growing these knots, and so we come to pruning. The rule of the best foresters in attempting to grow first-class timber is that "the whole surface of the ground should be canopied over with the heads. This canopy should, by gradual and annual pruning, be raised to the greatest possible height, and by gradual and annual thinning be supported by the fewest possible stems. For pruning trees to grow to their greatest possible height, the rules are simple, and they are applicable alike to the nursery-plant and to the largest timber-tree : Keep a clear leader. Cut off all branches large enough to compete with the stem, or which grow parallel to it. Shrive the stem up one-third of its height. Cut all close to the stem. With the above exceptions a tree cannot have too many branches, as the returning sap of each contributes to the growth in girthing of all that part of the stem which is below it, and to the growth of the root both in length and girthing. But pruning, like thinning a plantation, cannot be too gradual. It should be annual."

I would wish to press on all owners of farm property in Ontario, especially those whose woodlots are cleared, or seem decayed past renovating, the great desirability of establishing a plantation of trees along the north or whichever be the most exposed side of their farms ; call it, if we will, a shelter-belt, but when once about it, it would be much more advantageous to make the shelter-belt broad enough for a small forest. When we consider that such a shelter has often been known to double the crops in the adjacent fields, remembering too, the value of the wood which may be produced there, and how greatly care and cultivation may accelerate the production, it is not too much to say that, in the rapidly approaching scarcity of timber throughout Ontario, five or ten acres so devoted might become more valuable than the rest of the farm.

On the following pages will be found, first, directions in planting by practical cultivation, and many valuable instances of actual experiments.

The following letter from B. Gott, Esq., Arkona, a very successful cultivator of forest trees, will be found to give many points of great interest and value to all who desire to plant :

To R. W. Phipps, Esq., Ontario.

My Dear Sir,—With much real pleasure I attempt to answer your late enquiries addressed to me, regarding some points in Canadian forestry in Ontario. In doing so I beg most respectfully to say that I am intensely and increasingly interested in the subject, as a great national question fraught with future and lasting results and possibilities. It is impossible to conceive of a better or more valuable, and it should be, enduring heritage than has been conferred upon us, the people of Ontario, in the matter of our native forests. I am perfectly astonished and almost overwhelmed with the force of the reflection when I attempt to conceive the length of time required in the preparation of the soil, and then the all-pervading energy required for the production and perfection of the various crops of beautiful, varied and useful trees thickly planted over our landscape long before we saw it. Who shall deny the superintendence of an *All wise Providence* who "*sees the end from the beginning*," when he contemplates this piece of wonderful forethought for the best interests of man? I view with much and deep regret the depletion and destruction of the wealth of forest timber in Ontario. In considering the small and ineffectual efforts made for the conservation and reproduction of our trees, I am solicitous for the future of this country. If we succeed in destroying our present growth that cannot be reproduced, what, I ask in all earnestness and candour, will become of us as an agricultural people? Most certainly something can and must be done in some way to slacken our reckless destruction, and in some measure to provide for the future by timely planting such valuable timber trees as are known to succeed well amongst us. I therefore congratulate our government on their movement in forestry matters, and am hopeful in the work they have already so energetically set on foot.

I am sorry to have to state in the outset, that in the matter of planting forest trees and rearing them up to their various degrees of beautiful development, my personal experience is not by any means large or even exemplary. Though I have planted and cared for many hundreds, and I may say many thousands of trees in this country, and seen them make a nice and satisfactory start, yet when we consider these feeble efforts and put them beside the amazing plantings of a Douglass of Illinois and many other western experts, our efforts fade away to utter nothingness. This kind of forestry planting and culture we from our own efforts as yet know nothing about, but I feel that the time is fast approaching when we shall be compelled from necessity to familiarize ourselves with some of the introductory facts in the case, and I am glad, Sir, of your introductory labours and enquiries in this direction. But I must hasten to the question in hand.

Our Soil

is a mixed clay and sandy loam, rather porous and somewhat rolling, and naturally well drained. It was originally densely covered by a heavy and well matured growth of forest trees indigenous to such soils, and is rich in all the varied elements of vegetable life, manifested by a luxuriance truly charming. After clearing off the first crop of trees, as far as I am aware, and with great labour and difficulty relieving the soil from their everywhere prevailing roots and stumps, I have grown upon it almost every species of fruit and forest trees in our every day acquaintance. I have now a block (as the nursery-men would say) of mixed maples, etc., planted with forest seedlings, twelve to eighteen inches in height four years ago, that are as handsome in their growth and prosperity as a picture. They are about eight feet high, well branched and as clean and pretty in their stems as could well be desired, and now ready for planting wherever they are ultimately destined to remain.

I have also planted, with equally good results, white ash, basswood, ironwood, white wood, beech, elms, hickory, oaks, chestnuts, etc. The basswood and white ash are the most surprising growers, and soon establish themselves in the soil and make stout and aspiring trees that give delight to the cultivator. I have given much attention to the growth and propagation of the nut bearing trees native to this country, as the

Black and White Walnut,

the hickory and the chestnut. But of these the interest clustering around the two walnuts seem to be generally greatest, and I know several instances where they have been planted in considerably large numbers. We have black chestnuts growing in this neighbourhood, grown from the seed about twenty years ago, that have now a spread of full forty feet, with about that height, and with from fifteen to eighteen inches at the base of the trunk, which have been bearing nuts some considerable time. They grow with a surprising rapidity, and planted thickly, say six or eight feet apart, will tower to a great height in a comparatively few years. All over this section of the country they originally stood in great numbers, and of the finest and most surprising proportions, towering more than a hundred feet upwards, with a trunk as straight as a line for seventy or eighty feet, and as majestic as Pompey's Pillar, three to four feet at the base. We can get the young walnuts in about four years from the seed to be from six to eight feet in height, and strong, stocky trees, and that transplant with certainty and ease. In our estimates of the trees of usefulness and beauty I suppose few would not like to have left out of the estimate a notice of

The Evergreens.

In these interesting and beautiful trees my best success has been with the pines, spruces and cedars, both foreign and domestic. I might just mention that I have in my possession and growing on the place a block of Austrian and Scotch pines, about half of each variety. They have been allowed to grow up where they were planted in nursery rows eight years ago, and are now about twenty feet high. This block of pines is now the admiration of all who see it in its bold and sturdy outlines of green, and is quite a belt of protection and a wind-break for the rest of the plantations beyond. Though the wind should blow with all the severity and fierceness of old Boreas from the north or west, yet the climate beyond remains quiet and undisturbed. As a harbour or nesting place for the birds it is all that could be desired. The musical songs and chirpings of these beautiful and charming feathered visitants give great delight, and fully attest their birdish appreciation of so provident a piece of tree planting. All my trees are planted in their infancy in nursery rows, three and a half by one foot, to properly prune and cultivate and raise them up for their future place of usefulness.

The Seeds

are gathered by practical seed gatherers when desired in large and varied quantities for the trade, but for private purposes and when wanted only in small quantities they can be readily gathered just as they are needed, as the case may be. But in all efforts in gathering seeds, whether in large or in small quantities, either for public or private use, they should inevitably be gathered and preserved as early as possible after the maturity of the variety. Intense drying or long exposure to the sun or winds after maturity has the invariable effect of injury to vitality, and, if prolonged, of total destruction. Nature's methods in this matter in almost all cases is to drop the seeds, that is, commit them to the tender bosom of mother earth and carefully cover them up with fallen leaves and other debris, and thus preserve them with a little moisture in their coverings or cases. Then at the proper or appointed time they will almost certainly spring into life and beauty, and show the upward plumule which is destined eventually to stretch high into the realms of towering and giddy space. The seasons of maturity will be in almost all cases indicated by unmistakable signs, well understood by the practical forester who observes nature's delicate and provident operations. Some trees ripen their seeds in early summer when the year is yet young, while others not until late in the autumn months, or ripened by the frost. But at all times the practical seed-gatherer will be on the look out for the precious germs of future tree life and catch them in the most fortunate time. With respect to the

Preservation of Seeds,

much is to be learned from practical experience and positive knowledge of their individual requirements and needs. Some will keep for a winter easily in almost any dry and sheltered place, while others are more fastidious and will require nice conditions of atmosphere and moisture to ensure their immediate germination and successful growth and development. We cannot think of a seed without being filled with wonder and admiration at its mysterious contents and their unfoldings! The whole future life and beauteous developments of the tree starting and being multiplied by apparently such simple means, is amongst the greatest wonders of nature, and tax our feeble powers of comprehension. The sowing of the seeds should in this climate, in almost all cases, be done in the opening year, the season when nature delights to manifest herself in all her early vigour, and in all her young and buoyant beauty, when everything that has life is pushed into activity. They should in all cases be sown on well prepared and thoroughly drained land, formed into warm and mellow seed beds, and as early as the season will allow. I like to cover those beds with shading or screening, to imitate as closely as possible the tender protections of the parent tree. They are there grown for a year or two, and are afterwards carefully transplanted into nursery rows, as before stated, to prepare them for future plantings. In the present condition of our experience to question whether

To Plant the Trees or Sow the Seeds

has no bearing upon us. None of our experienced foresters should for one moment think of such a procedure as the sowing or planting of seeds in places where future trees are to stand. The better practice is to take a fine strong, vigorous four or five-year-old tree, after proper preparatory culture and training, and plant it at once in the place where it is to stand for the remainder of its life. In this way, whether the plantation is to be thick or thin, whether scattered or condensed, we get the best developments of beautiful and useful trees. I usually keep the young trees in training in the nursery rows some three or four years, or say, till the trees are six to eight feet in height, and during this whole time they are kept perfectly clean and thoroughly cultivated by means of horse cultivators and hoes. They are then taken up and as carefully planted permanently in the places where they are designed to stand for life, either for timber or for ornamental or protective purposes. For timber they are planted in rows on well prepared and well drained soil, four by three feet, to give them a strong, straight, upward growth, and to prevent too much side growth, as we want from the first, straight and towering trees for future use. After a few years growth, when crowding is distinctly noticed, they are thinned by cutting out close to the ground every other tree in the rows, leaving them at distances of six by four feet. After a further time other cuttings are made, to thin them again by cutting out every other row, leaving them at distances of six by eight feet, and so on *ad infinitum*.

These Cuttings

may be made use of for various useful purposes in the farm or garden work, or they may be profitably sold to the trades for usefulness in their work, as for poles for barrel hoops, for withs, or even fence posts, etc.; and the small brush is used at home for drains and other purposes too numerous to mention. If, instead of sowing the seeds of trees, you wish to go to the woods and gather seedlings for transplanting (a practice giving very good results), be sure to take up only well formed, well rooted, and quite small trees, say, not over two feet in height, as these can be planted at once in nursery rows, and thus save about two years of valuable time, and much other vexing labour and expense in your operations. Give them good culture, as before noted, and they will in a very short time give you great satisfaction, and will ultimately make a rapid growth and fine trees that will well repay you for all labour and expense bestowed upon them. The kind of timber trees I would advise to plant for rapid and profitable results are the maples, in great and splendid variety, the elms in three or four varieties, the two ashes, and several of the stately and royal oaks. I will also mention, as very desirable, the black and white walnuts, the chestnut and the hickory, also the basswood, the tulip tree and the beach. Of the evergreens, the pines, the spruce, and the cedars are very pleasing. Any or all of these fine native trees will give the very best results, and astonish by their rapid and splendid growths.

My last advice is, by the preceding descriptions of trees and their management from infancy, cut down to a mimimum. I may say, however, that I would prefer nursery grown seedlings in preference to forest seedlings for plantings, as I think the former will pay for all extra expense upon them on account of their superior excellence for planting. Again, I am a firm believer in the advantages of frequent transplantings of trees while young, in order to get a better and more massive growth of surface, fibrous roots. This may look paradoxical at first, but abundant practice fully attests its trustfulness and value.

I believe it would be of immense advantage to farmers to teach their sons (and even daughters, too) to cultivate small patches of ground for the express purpose of making frequent sowings of tree and shrub seeds. These could be transplanted carefully while young, and by training and culture they would soon have many choice and beautiful specimens of forest and other trees to plant permanently over the homestead, to beautify and protect. These trees could be readily and cheaply planted as isolated specimens on the lawn, to give pleasure and pride all the year round, or they could be planted in belts for wind-breaks and storm shelters around the orchards and fields, or in groves around the buildings and the home. Again, I would earnestly advise that by some means or other yet to be devised, that every owner of a farm lot, or of a village, or a town lot be encouraged to do something annually at tree plantings, either fruit or ornamental, and by this means to keep plenty of trees on the landscape. It is only by feeble attempts in small beginnings that great achievements can be effected. If we each and individually wait to plant large blocks of trees to cover the face of the land, and so to astonish ourselves and our neighbors by our stupendous efforts, we shall not in all probability do much, either for ourselves or our neighbors. The aggregate of every man's small efforts in this line over the face of this beautiful country will amount to much, and eventually be the means of redeeming the country from deforestation and sterility, with all their attendant misfortunes.

You will now allow me as briefly as possible to give you a few

Examples of Evergreen Growing

made in this section of country, and of the beneficial results experienced. A few days ago I and my "better half" went over to Mr. James Bissel's pretty place, about a half mile north of the village of Thedford, on the fourth concession of Bosanquet and a station on the Grand Trunk Railway. On a very showy place, beside the public road, and about ten rods from it on a deep ravine, Mr. Bissel placed his dwelling and home gardens. On the north and west sides of the home and garden spot he planted a belt of Canadian white pine *(pinus strobus)* on the 6th of May, 1876, or eight years ago. He went to the adjacent pine openings and took up, with the best of care and knowledge he was possessed of on the subject, a quantity of fine, young, thrifty trees about six feet in height, and carefully and as quickly as possible transplanted them around his lot on the sides indicated, in one continuous row, about six feet apart. It was a grand success, and the trees grew without much difficulty, and have since made a fine, strong, progressive growth, in height and dimensions perfectly satisfactory, being about eight or ten feet in diameter of spread at the bottom, and twelve or fifteen feet in height, with a thickness at the bottom of trunk of six inches. Mr. B. told us that in winter time his family experienced quite a sensible and feeling difference between the inside and the outside of this belt, and that the temperature and fierceness of the winds did not appear within several degrees the same upon the inside as upon the outside, where he had to go if he wished to ascertain the full power of the blast that was raging without. On the land on the inside of this belt and surrounding their home they grew fruits, such as apples, peaches, grapes, etc., with vegetables and flowers, with tolerable and encouraging success. But

The Best Example

of this kind of tree planting and a model of the kind I wish to get at is furnished by Mr. R. Thomas, on his place, a little further north of Mr. Bissel's. Mr. Thomas is said to have come originally from Wales, with a good practical knowledge of agriculture and horticulture from his youth, and bought his lot of fifty acres with some improvements on it, some fourteen years ago. He told us, in conversation, that at that time he found it exceedingly difficult, in times of winter storms, to stand outdoors to chop wood or to do any outside domestic work, and that this state of things suggested to him the idea of planting a good belt of pines around his home, to include also his garden and orchard.

He consequently, thirteen years ago, set to work to plant young native white pine trees, on the north side thirty-five rods, and on the east or front of the lot and west ends, twenty rods each, making a total of seventy-five rods. On the following year he planted also the south side, being so well pleased with the previous year's work, thus making a total surrounding of his home-ground and including nearly four acres of soil. They went for the trees to the open pine slashings, and took up, nice, young, branching, forest seedlings about six or seven feet in height, from open spaces, having good roots and as much sod as possible still adhering on them, and as quickly as possible, planted them carefully in their places, most of them twelve or fifteen feet apart, and others only about six feet. They grew with remarkable readiness and beauty, scarcely five per cent. of them dying, and these were uniformly filled in the next spring. On approaching this plantation to-day, it is a most conspicuously attractive spot, and at all times inviting to the gaze of the traveller. Situated as it is by the side of the public highway and on an eminence, it is seen for long distances. Its long and beautiful branches, with their wealth of refreshing green, gently waving in the summer breezes, formed a scene we loved to look upon. From what we saw, we could readily imagine what kind of protection this belt would afford from any direction against winter storms and piercing winds. We found some of the trees to be eight or ten inches through at the bottom and regularly and thickly branched, their whole length fifteen or twenty feet in height, making a regular and progressive growth of about two feet per annum. On going into the enclosure it seemed as though we were in an amphitheatre of beauteous proportions, with those charming pine branches gently waving in the winds on all sides of us, as if in perpetual and ceaseless motion. Within, besides being the home, there were the vegetable gardens and a large plantation of apple and peach trees that had already reached goodly proportions, although yet quite young. On the apple trees the branches were hanging, heavily loaded, to the ground, with a regular, clean and very promising crop of fruit. The trees looked better and healthier, with better leaves and cleaner and better fruit, and more of it, than had the generality of those in their neighbourhood. Although there are not, this season, many peaches on the peach trees, yet this gentleman told us that they had in other years raised many very heavy crops. On the whole, this was the best specimen of a wind-break, both as regards beauty and usefulness, we had ever seen, and the *beau ideal* of what we had often tried to picture to ourselves in our frequent communications. After a little more questioning, Mr. Thomas said that now he could stand to cut wood in a storm with his coat off and be comfortable, and that he considered it worth to his farm $500, nor would he like to sell it at that, if not to be replaced. Another point that struck us forcibly was the value and beauty of our admirable Canadian white pine as a tree. I had often attempted to contrast this pine with the imported Austrian and Scotch pines, hardly being able to sustain the comparison. But this plantation has completely turned me over in my judgment, and I will now cheerfully vote for the native Canadian born on our own hills and towering in our fertile plains. Is not this as it should be and agreeable to our cherished motto, Canada first? The points of excellence seems to me to be—1st. A beautiful, clear, refreshing green colour of leaf, delightful to look upon. 2nd. Long, swinging or swaying branches constantly in motion in the summer breeze. This contrasts finely with the stiffness of the other two pines. 3rd. A regularity from bottom to top of branches decreasing in length, but with a dense fulness of branch and leaf, giving a deep fulness to each individual tree without any break in it; and 4th, nationality. It in every case and in every place reminds you at once and forever of our beloved Canada.

A short distance further to the north of these plantations and on the same line of road there is one of the most admirable blocks of many acres of natural growth of white pine from seedlings in open pine choppings that is to be met with in the country. About twenty-five or thirty years ago the large and noble trees from this pinery were removed, and the land, left merely fenced and protected from the inroads of cattle for a few years, is now densely covered with as handsome a growth of young and promising pine as could possibly be desired. Their beautiful deep green and long slender branches on all outsides, and open spaces, are very attractive, and the traveller passing them is compelled to admire their beauty and to wonder at their rapid and astonishing growth. I suppose there may be twenty-five or thirty acres of this kind of natural plantation in the block, and the trees have now reached a height of twenty to twenty-five feet, with a good bulky thickness of trunk. This pine in a few years more will afford to the people much of value in evergreen branches for shades, coverings, and decorations, and also in young and valuable timber for many useful and indispensable purposes. In expense it has really cost the owners nothing but the taxes on the soil.

Mr. Bissel mentioned a point in conversation that is of special interest to them, living, as they are, just south of the shores of the great and majestic Lake Huron. They were formerly protected from the cold winds coming over the lake from the north and sweeping with great force over this whole region during the winter, and even the spring months, by a dense belt of Norway pine, that was found growing on the sand hills in a continuous line, parallel with the shore, and reaching for many miles. This mass of pine raised a most effectual barrier, to the height of about one hundred and fifty feet above the water, to these cold and destructive winds. This had the effect of greatly protecting much of the country that lay many miles to the south of it, including a fine agricultural country of many thousands of acres in the counties of Lambton and Middlesex. This whole country and belt of timber were in possession of the "Canada Company," being a company of English land owners, and they through their agents saw fit in their wisdom to give permission to have the whole of this timber sold and removed in very recklessness. Now at this present, these hills are seen in the distance to be bare mountains of sand, sand, uncovered with their usual dark and dense mass of green, and the wind barrier is in consequence lowered fully fifty feet. The effect of this removal is now being felt by the people of this entire region of country, in the increasing cold of winter, in the greater severity of their wind storms visiting them, and in the frequency and severity of the destructive and much dreaded spring frosts late in the season. Surely there is not always wisdom in great corporations, much less if those corporations are foreigners and unacquainted with the conditions and reasons of things. This instance forcibly opens to us the absolute need existing in the most of our locations, even thus early in our history, for self-protection against the increasing force of cold and wind storms by judiciously planting trees around our homes, our orchards, and our fields. The wisdom of depending upon others is not always safe wisdom.

Yours,

B. GOTT.

Arkona, August 26th, 1884.

I have great pleasure in laying before my readers the following statement, procured from Mr. Ross, one of the most thoroughly practical tree cultivators in Ontario. All he has stated here is based on his own experience of years, both in working with his own hands and in directing others. There will be found complete rules for gathering seed, sowing it, transplanting the young seedlings into nursery rows, transplanting these again to the places wherein they are designed to stand; with full statements as to the classes of trees most suitable, and the soil, time and manner fit for the prosecution of each operation.

GROWING FOREST TREES.

By J. McPherson Ross.

The growing of any of our native forest trees from seeds is a very simple performance, and calling for no particular skill or experience, as the same care requisite for the successful growing of a crop of roots or grain will suffice to raise thousands of tree seedlings. All that is necessary is to be careful and attentive to the various details that will be mentioned here, and success is certain. Neglect and indifference will ruin everything. The best time to sow the seeds of any tree is at that period when they are ripe. For the sake of convenience I will place the various trees in groups, noting the time that the seeds of each group are ripe. The first group will be the *nut-bearing trees*, such as the

Oaks, in variety,	Hickory,
Walnut,	Beech,
Butternut,	Chestnuts, in variety.

I need hardly mention that the nuts will be ripe in the fall. As a certain time to gather them all in the different localities through the country, I will say about the 15th of October. Of course many are ripe earlier in the year, and all may be gathered at any time after the 1st of October. A sharp frost will facilitate the seed gathering. The gathering and after care of the nuts I will notice again. We now pass to group No. 2. In this I place the trees that ripen their seed in June. These are elms, in variety, as our

Slippery Elm (*Ulmus Fulva*),
White Elm (*Americana*),
Wych or Scotch Elm (*Montana*),
Corky White Elm (*Racemosa*), and
White or Silver Maple (*Acer Dasycarpum*),
Scarlet or Soft Maple (*Rubrum*).

In group No. 3 I place the deciduous trees of all kinds that ripen their seed in the fall, the same time as the first group of nut-bearing trees, as follows :—

Hard or Sugar Maple (*Acer Saccharinum*),
Norway Maple (*Acer Platanoides*),
Ash Leaved Maple or Box Elder (*Acer Negundo*)
Butterwood or Plane Tree (*Platanus Occidentalis*),
Birches, in variety (*Betula*),
White and Black Ash (*Fraxinus*),
Basswood and Linden (*Tilia*),
Locust or Acacia (*Robinia*),
Wild Cherry (*Cerasus*),
Alder (*Alnus*),
Mountain Ash ;

and in the group No. 4 I include all the evergreens in their three sub-families, pines, spruces and cedars, the seeds of which are also ripe in October.

To return to group No. 1, I find the same treatment required to grow any member of this class successfully applicable to them all, and any directions given as to care of seed, sowing, mulching and transplanting equally apply to all walnuts, oaks, etc. This the reader will please bear in mind. To keep nuts after being gathered in good condition for planting it is necessary that they should be kept moist, or not given undue exposure to sun and wind. They should be kept in boxes or barrels with a little damp sand or earth mixed with them till the opportunity arrives for planting the nuts. By all means sow them in the fall, if practicable at all, but when they are procured from distant places, and it is not possible to sow in fall on account of late arrival, place the nuts in thin layers in boxes, sprinkling through them sand or earth, and leave out-doors in a shady spot where they can remain frozen, or keep them in cool cellar where, if they do not freeze, at least it will not be warm enough to cause them to grow before time to sow outside. Or another plan is to dig out a shallow pit, say one foot deep and dimensions to suit quantities of nuts on hand. On the bottom of the pit strew the nuts evenly and thinly, sprinkle them with earth or sand, enough to cover them so as to protect them from being destroyed by mice or other vermin ; then place over all a covering of leaves or strawy litter, placing thereon a few heavy pieces of timber to keep the covering in place from being blown about or disturbed by winds. In the spring of the year the nuts will be found in fit order for planting, which should be done as early as possible. But, to return to fall sowing, I strongly advise to sow all tree seeds ready in the fall, as this is the natural time for such work. An observer of the woods readily understands how Dame Nature provides for the future growth of trees ; the seeds or nuts fall when ripe, then the leaves fall, covering the seeds with a careful cover, or, as tree-growers term it, a mulch. The leaves not only protect the seeds from all extremes of exposure, but also furnish, when the warm weather sets in and the seeds sprout, the tiny plant with moisture and food as the decaying parts of the leaf resolve themselves back into the elements. Then a safe rule to all growers is to follow nature by observing her simple laws and copy them. I now go into the details of the *modus operandi* of growing trees from seeds, the general rules of which apply to all kinds, and which may be summed up in the one sentence, *i. e.*, to sow the seeds and cover them. But as it is here necessary to give the fullest information which experience has taught, and which I do gladly, I will confine myself to directions necessary for growing groups 1 and 3, leaving the other two groups for the present, as they call for remarks and notes peculiar to each, but which agree in the main with what I am now about to observe.

Sowing the Seed.

Having the seeds of all kinds ready for sowing, we now come to the soil proper to grow them.

For this purpose select a piece of land naturally dry, in good clean condition, just such a piece as any good farmer would consider capable of growing a good crop of anything on the farm. The soil *must be* on top a sandy loam. This is absolutely necessary for this reason: Sandy soil is not subject to upheaval by frost as are clay soils. Seeds sprout through a sandy covering easier than through clay, as this last frequently bakes into a hard crust which it is almost impossible for the young seeds to push through unless the crust is broken carefully with the fingers or an instrument—a delicate job, and no matter how carefully done, sure to be fatal to many of the young shoots alike in all nut-seeds, which resemble in a measure young beans and are equally brittle in their formation. Where it is not possible to have a seed-bed of a light sandy loam, and a person has to sow on clay, be sure and cover the seed in the drills it is sown in, and fill the drills to the surface with sand brought for the purpose. It does not matter what the quality of the sand is. A sand the same as builders use will answer capitally. A piece of land selected for a seed-bed should be deeply ploughed or dug; the surface should be even, and not too flat, so that no water will remain to cause stagnation and destroy the nuts or seed. When all is ready make the drills the full width of the hoe, which would be six inches and about two inches deep. Now sow the nuts thinly—large nuts, as walnuts, horse-chestnuts, etc, about four inches apart in the row; acorns and smaller ones a little thicker, but as the after growth is about the same, the same distance will answer. Cover evenly with soil and tread the drill firmly. For sowing tree seeds the feet are as useful as the hands. I place great stress on this treading the soil, as this places the nuts firmly in the land and also makes sure of covering the soil over them. After the drills have been tramped rake the loose soil evenly over all. A proper distance apart between the drills would be twenty inches. This distance gives convenience in weeding and hoeing the drills, as all the cultivation of seedlings must necessarily be done by hand. In reference to how deep seeds should be sown, a safe rule is to place the covering of soil twice in thickness the diameter of the seed, so that while a chestnut would be covered with two inches of soil, a beech-nut would have about an inch, and so on in proportion. There are always exceptions to rules, and what a person should strive to attain is, a happy medium. Allowance must be made when sowing the seed for the loose soil to settle so that the seed may be always covered a little more, as the subsidence of the soil will bare the seed more or less. And now I come to the chief factor of success in growing seedlings, and that is the mulching. So long as the seed-bed is covered after sowing with a good *mulching* of any litter, manure, leaves, straw or stalks of any kind, success is certain. As to covering the seeds in the drills, should any mistake be made about not putting enough soil, the mulching will make all right. In fact, seeds sown on top of the ground, if only mulched, will grow and do well. This mulching should be left on the bed till warm spring weather sets in, or an examination of the seed-bed shows the seeds pushing their tender shoots through the ground. Rake the mulching into the space between the drills, where it may be left if of a fertilizing nature; here it will keep weeds down and the soil moist. If, however, it be of a bulky nature and might impede the growth of the seedlings, have it removed and commence the cultivation of the seedlings the same as you would a crop of carrots,—hoeing, weeding, etc.

We have now the seeds growing and the first season passed over. In the seed-bed plants of maple, ash, birch, chestnut, elm, and all fibrous-rooted trees, may be left two years; but as the roots on all nut trees are tap-rooted, it is necessary to take them up the following spring if they make any vigorous growth. If they do not, then you may leave them two seasons, but no longer. Another reason for not disturbing the seed-bed too soon is that very often seeds lie dormant the first year and come up the second. The seed of the ash sometimes will thus remain dormant. After two years of growth in the seed-bed our seedlings will be ready for transplanting. As early in the spring as the ground will allow for digging have the seedlings dug up. They should be assorted in two sizes, the large and the small. With a sharp knife cut the leading and tap roots back to within six inches of the collar. Do not touch the tops at all, tie them up in convenient bunches for handling, dip the roots in a thin mud and heel in ground convenient to your work. The best soil to grow all kinds of trees in nursery rows is what is known as a sandy loam with a clay bottom. Select a piece answering that description, and have it prepared as for any farm crop. To prepare it properly it should be summer-fallowed the season previous, but that is not necessary though desirable, as any land in fair tilth will answer. Having it ploughed and harrowed, set the line parallel with the longest way of the lot, if most convenient to cultivate that way. A good strong garden line is the most useful and indispensable article in the planting of trees. The line set, level all inequalities of the soil with the spade under the line and pat the soil down firmly by striking with the back of the spade on the line. The next operation is to cut out the drill by striking with the edge of the spade parallel with the line run, as it were to split the line. A little practice will make a handy man very expert and exact in cutting the line, as it is termed in nursery parlance. The drill is now dug out a spade wide and the soil put neatly on the opposite bank from the line—the bottom of the drill being evened with the spade as the digger goes on digging out the drill. All is now ready for planting, and the planter, provided with a bundle of plants, stoops and places a seedling neatly against the bank, placing the collar of the root evenly against its edge. Another person at the same time places a spadeful of soil with a quick turn of the spade snugly and securely against the roots of the plant. So the planting goes on, and as the planters get more expert, they can place the plants as fast as a slow walk, as we might say, to use a paradox. The plants want firmly treading and straightening, and the balance of the trench may be filled in and levelled off. A convenient distance for any kind of forest tree in a row would be one foot apart, and the distance between rows four feet. This allows cultivation with cultivators and single plough by horse and man, and is in everyway convenient for growing trees straight and in good shape. Out of these rows the trees may be transplanted at any time, spring or fall, to other places, or if the idea is to leave them there permanently they will succeed. After growing three or four years every second tree may be dug up and transplanted. After four or five years' growth every second row may be removed entirely, thus leaving the rows eight feet apart and trees two feet apart in the row. In this arrangement on fair soil the trees may be left to grow to form timber or wood. The strongest will now survive, and any weakly ones can be removed at the option of the cultivator. I again repeat that very little experience, with an observant mind, will soon teach a person how to grow and manage the trees for forest cultivation. Before mentioning anything further connected in a general way with tree-growing, I will return to group No. 2, consisting of elms and maples, ripening their seed in June. As soon as these seeds are beginning to flutter to the ground the main crop on the tree will be found ripe enough for gathering. As these two trees are two of the most important classes of trees we have in our whole list of forest trees, having so many qualities in the value of the timber for firewood, lumber and every other use to which these useful trees may be applied, the importance of their position in the landscape of the country and many other qualities, had we time to mention, it is a great blessing or boon to know that they reproduce freely from seed, also that the trees bear great quantities of seed, also that they ripen in summer early, in time to allow of the seed being sown there and then, and that it grows the same season, making a foot or more of growth the one season. The same directions as mentioned before are now applicable to the elm and maple seeds. I must repeat, when sowing the seed be sure and tread it in firmly—the same distance apart in the rows, and after cultivation, as mentioned before in connection with transplanting, etc.

On good deep soils the seeds and nuts of trees may be sown where they are intended to remain; a couple of years' clean cultivation afterwards will enable them to take care of themselves. On thin light soils they will be better to be transplanted so as to induce a lateral growth of the roots. I now draw attention to the evergreen class. Hitherto young trees of all kinds of evergreen have been easily procured in abundant quantities from neighbouring woods and swamps. There are still great quantities to be easily secured; nurserymen and large planters have drawn their principal supplies from the woods, and as they have always been able to secure their stocks without much trouble, very little attention has been paid to securing seed and growing it. The white pine ripens its seed in the fall; the cones may be gathered whenever convenient, late in the fall or through the winter; by exposing them in a warm dry room the scales of the cones open and allow the seed to drop out. This should be gathered at once, as mice are very fond of resinous seeds and would destroy them as fast as they drop out. A good plan to secure the seeds of pine and spruce easily is to cut the branches having the cones on, tie them up in neat bunches, cover all up in muslin and suspend from nails in a warm place, over a stove or other heating arrangement; have the mesh of the muslin small enough to retain the seed; after the seed is all out put it up in paper bags and keep in a dry place. The seed of the cedar should be sown when gathered in the fall, either in drills or broadcast in small beds enclosed with boards, covering lightly with soil in which a goodly quantity of sand is incorporated, and mulching over with leaves. In the seed bed they may be allowed to remain three years, when they can be carefully transplanted to other places in nursery rows—select a damp, partly shaded spot for sowing the seed. A similar plan will answer for the pines and spruces. The most necessary element in the successful growing of evergreens is keeping the soil in a uniform state of moisture, alternate damping and drying of the soil being fatal to seedlings. Persons familiar with the country and tree growth will have often noticed the thrifty little pines, hemlocks or cedars, growing on the damp hillside generally facing north. Here self-sown they rear their rich green foliage to the passing breezes and blue skies above. A moment's reflection and study will convince any person of the proper and essential rules to be observed in growing young evergreens. They are, a uniform moisture of the earth, the soil to be of a dark rich loamy nature, full of sand and leaf mould, plenty of air and partial shade. Any system embodying the foregoing principles must be successful. Evergreens, when small, thrive planted closely together. They thus afford mutual protection to each other, from the density of the foliage preventing the wind from a too boisterous acquaintance, shading the soil, keeping it damp and cool. So it follows when planting in nursery rows, plant them any distance that the outer branches just touch each other, and the rows far enough apart to allow cultivation easily. As the trees continue growing in size, keep thinning them out either in the rows or by taking each alternate row out altogether. One rule to observe in the cultivation of evergreens is that they thrive best by themselves, not when planted indiscriminately amongst deciduous trees. They will grow on poorer and thinner soils than deciduous trees. It does not follow, however, that they require poor soils to grow in; like every other plant, they thrive in a corresponding ratio to the treatment they receive, and will grow better on good soils than on poor ones, etc.

Persons convenient to woods and places where young trees are to be found are fortunate in being able to secure young trees all ready, without the trouble of waiting to grow from seeds. They can thus commence plantations right away, and may begin either in fall or spring. If in the fall, the best time would be after a fall rain, or say about the fifteenth of October. That is a safe time to go about doing fall work in the way of planting and getting trees. In damp situations the plants can be easily pulled without injury, but where they will not draw easily it will be necessary to carefully dig them up. When all are gathered, that time and opportunity will permit, they should be packed tightly into the wagon-box or in cases, same as used by nurserymen for shipping. Do not expose long to wind or sun, but keep in shade of trees, or cover with moss or leaves till ready to pack for carrying home. Arriving there, they should be unpacked and sized in two or more sizes so as to make them of uniform strength. With a sharp knife, trim the tap roots off, as advised before about seedlings, leaving about six inches of a root; this makes the plant neater and more convenient for handling and planting, besides inducing an after fibrous growth of roots which will make them easy for transplanting any time afterwards.

Preparing the Soil.

Land intended for using as a nursery for growing them in should be clean and in a state of fair tillage. Any soil that is considered fit to raise a good crop of grain or roots will answer capitally for trees. I have now reference to young seedlings of maple, elm, ash, and all hardwood trees. Poplars, willows, and trees of a softwood nature will also do well on these soils. But in all cases my experience of tree growing goes to show that the better condition of the land the more the growth corresponds and *vice versa.* If you have a piece summer fallowed to spare, all the better. In this you can at once commence to plant. Make a neat and careful job of the business—and we know it always pays, to be careful—as the satisfaction you afterwards enjoy after the work is done will more than repay the extra trouble.

I would now say, plant in the fall if you can, as spring work on the farm generally crowds outside intentions, although I trust tree planting is not a foreign or side speculation, but should be a very important operation on every farm. If not convenient, however, to plant in the fall, heel your plants in some location where they will not be disturbed by trampling under foot or be nipped by cattle. April or May is the time, however, to get plants in the spring. All seedlings, but particularly evergreens, should be procured at that time, particular care being used to keep the roots of all moist, especially the evergreens. When planting in spring, it is well to dip the roots of all in thin mud just before planting. When not convenient to procure young plants from the woods, quantities of all varieties can always be procured from nurserymen at very low rates. In the old country they make a specialty of growing forest tree seedlings. There they are offered by the tens of thousands, as forest tree planting is practised on an extensive scale in Europe. The following is a list of the trees which are grown principally, and which succeed and do well here:

Norway Maple (*Acer Platanoides*),
Alder (*Alnus Glutinosa*),
European Birch (*Betula Alba*),
European Ash (*Fraxinus Excelsior*),
European Linden (*Tilia Europea*),
Scotch or Wych Elm (*Ulmus Montana*),
Norway Spruce (*Abies Excelsa*),
Austrian Pine (*Pinus Austriaca*), and
Scotch Pine (*Pinus Sylvestris*).

Any of the above may be imported from Europe during the month of March. They are packed to carry safely to any part of the world, and are sold at very low rates by the thousand. There is no doubt but that the time has arrived when planting must be carried on on a large scale so as to make some provision for that future which is rapidly nearing us. There is no doubt but in clearing of our woods in the thorough manner we have done in the past, that we have sold our birthright for a mess of pottage. It does not tax the memory of the writer very much to remember a few years back, within a few miles of Toronto, of rippling streams the whole summer long; of cool wooded banks and leafy glens, of hillsides at whose base pure springs of the coldest water could be had, and often speckled trout and water cresses; of ponds where schoolboys could go in and bathe, and shout and splash like "troutlets in a pool." Now these are bare and bleak hillsides, parched and burnt, and seamed with lines ploughed deep with frost and storm. Where the gurgling stream pursued its way is a long thin white line like a skeleton of bones and stones—in the spring thaws a roaring flood for a day or two, and then silence for the rest of the year, excepting, perhaps, a thunderstorm and a few hours' stream, and all is over. Railroads are continually cutting their strips through and around the woods; the lumberman's axe is continually ringing in the bush; joined to these, fires cause terrible destruction. Some expeditious method must be adopted, that, while it will not hinder the progress of improvement, yet will conserve the woods in a way that will furnish a continual supply for reforestation. It is a well-known fact that our climate is steadily undergoing a change not for the better from this continuous clearing without replanting. Nature makes every provision for new forests and plantations by the abundance of seeds each tree bears for its reproduction, and, that the cultivation of timber is remunerative there is no reason to doubt. Any person can satisfy himself as to this fact by visiting any of our established nurseries or parks in cities, or observing the trees planted in the streets, where the costs may be figured and the cords of wood for firewood, or other uses timber is put to, may be estimated at their proper value.

PLANTING NEAR TORONTO.

The following communication from George Leslie, Sr., of Geo. Leslie & Son, Toronto Nurseries, gives the opinions and practice of, I believe, the oldest nurseryman in Ontario. Mr. Leslie is in his eighty-fourth year, has passed his long life in tree cultivation, and is an enthusiast in his vocation :—

If trees are planted by the acre, ten acres or more, they should never be planted in rows; planting in rows is never practised in Europe where thousands and thousands are planted every year. They are planted in, or dotted in, as the ground suits, among rocks and stones from three to five feet apart. Plantations set for timber and other uses are better mixed with evergreens, such as spruce and pine trees. Those procured from the nurseries are always the cheapest. Where the ground can be ploughed deep it helps the growth of the trees. In 1848 I imported the following sorts from Europe: Larch, Norway Spruce, Silver Spruce, Australian Pine, Scotch Pine, Siberian Cedar, Norway Maple, Sycamore, Scotch Elm, English Elm, English Ash, Beech, Oaks and Turkey Oaks, European Birch, a noble tree; Scotch Alder, or Mahogany, as it is called in the old country, a splendid tree for the North-West; it grows very fast—makes fine furniture. Hornbeam is hardy and makes a fine hedge. Specimens of all the hardy European and American forest trees of large size can be seen in our grounds, some of them measuring over two feet through. The Chinese Abele is the best tree that can be planted in the North-West. All sorts of willows are valuable for shelter; the Huntingdon Willows are the best of the sort, growing fast and straight as a Lombardy Poplar. The foliage is silvery; it is new in this country.

Propagation.

The following trees are easily raised from seed, if sown in proper season : Maples of all sorts, Birch, Elms, Sycamores, Mountain Ash, English Ash, Alders, etc. Should be sown in summer or autumn, as seed is ripe. Cuttings should be made in the winter. All the trees that grow from cuttings should be buried in the ground where the frost will not touch them, and planted out as soon as the frost is out of the ground.

PLANTING IN RHODE ISLAND.

The following statement from H. G. Russell, Esq., Rhode Island, gives an idea of the pains which are being taken on that exposed coast. Where probably a forest stood, and has been unwisely cut down, they are planting trees by the hundreds of thousands to obtain another. It is certainly likely that if the descriptions of trees mentioned succeed well on such soil as is here described, many of our poorest soils can without difficulty be reforested :

I am glad to give any information I possess in regard to Forest Culture, but I fear I cannot enlighten my readers very much, as this is quite a new enterprise in all parts of the United States. I can only tell you what I have done in tree planting on my farm, situated about fifteen miles from here, in Warwick, R. I.

I do not know of any other person in this vicinity who has planted forest trees on anything like a large scale, although a number of my friends are taking quite an interest in what little I have done, and I feel encouraged that my experiment may induce others to plant largely in forest trees adapted to our soil. I think if a large part of the poor soil of New England could be planted in forest trees, it would return more money, in thirty or forty years, than in any other disposition that could be made of it.

My farm is a long and narrow one, containing about six hundred acres. I have on one side about two miles of shore, being an arm of Narragansett Bay. This shore is much exposed to north winds, and my object is to plant a belt of trees the whole length of this shore, from six to eight hundred feet wide, which I trust in time will make a break-wind for the rest of the farm, thereby improving the land for cultivation. The soil of my farm is poor, being a sand and gravel sub-soil, therefore I have confined my planting to the kind of trees that are supposed to do well in this soil. My first planting was commenced in the spring of 1877, when I planted seventy-five thousand European larch. These were small seedlings, planted in rows about one foot apart, having been once transplanted, and about six to eight inches high, and not much larger than a knitting-needle.

I have continued to plant every spring since, and have now more than half of my belt planted. Inside of the larches, I have planted white and some Scotch pine, and among the larches I have dropped about every two feet a white oak acorn, all of which are doing well. Some of the larches of the first planting are now over fifteen feet high, and three to four inches at the butt. Some of the acorns are now little trees several feet high and promising very well. I have also planted Norway maples, sweet chestnuts, and the Corsican and Austrian pine. Thus far the white Austrian pine, European larch, with the Norway maple, chestnut, and white oak, as deciduous trees, are looking the best.

I think more of the Scotch pine when planted as a nurse for other trees, but their roots on my soil run so near the surface of the ground they are liable to blow down when fifteen or twenty feet high, and I do not think they will prove as valuable a tree on this side of the Atlantic as when grown on their native heath. I am cutting them out when they encroach on other trees.

I should also add I have planted some red pine seedlings which are doing very well. I have not been able to get many of these plants, or should have used more of them. I have found it best to plant young seedlings, three or four years old, having been once transplanted, placing them in the ground about eighteen inches apart in the rows, and the rows four feet apart, so as to run a cultivator between the rows, which I find helps the young plants very much the first year or two. When the young trees are large enough to shade the ground they will be able to take care of themselves. I have done but little in transplanting from the rows, as I find the yonng trees put close together, and gradually thinning them out, do much the best.

I have procured most of my young trees from R. Douglas & Son, Waukegan, Ill., who I have found very reliable people to deal with, but the transportation costs so much. I am now trying to raise trees from seed, and see no reason why I should not meet with success. I cannot think of anything more to add, except I feel encouraged and quite sure, if I live long enough, I shall see quite a forest of trees on my farm, which will be more profitable and ornamental than any other way in which I could have used the land. I am very much interested in this work, and shall be glad to receive or give any information.

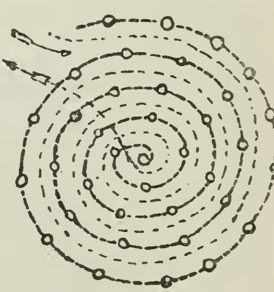
FOREST PLANTING IN NEW YORK

The article which follows is from Mr. Henry Ives, Batavia, N.Y., one of the most successful cultivators of forest trees in that country. The soil and climate are in most respects similar to what we have in many parts of Canada. Mr. Ives' statements may be fully depended on for their accuracy. An excellent and valuable point in his treatise will be found to be the directions for growing a circular plantation, after the plan of one which exists in full beauty on his own grounds.

The native *flora* covered a large portion of this new world only a century or two ago, but when civilized man came to occupy the ground, he made it one of the first objects of civilization, to, as far as he was able, denude the land of its noble timber crop, to make place for other crops quite as essential, so much so that a man was famous according as he had "lifted up axes upon the thick trees." But through this process such a great change was wrought upon the face of nature, that as it came to be overdone, both man and beast, and the vegetable kingdom, were left to suffer such scorching heats and blasting winds as only forest growth is capable of protecting a country from; and then (as at this time) men of prudence and philanthrophy commence to look earnestly for the remedy. And first, it is found that the small, isolated plot of original forest timber, the wood-lot of the farm, for the agricultural districts, is thinning out and dying out rapidly, mostly caused by the removal of surrounding forest growth which had ever been its protection, while in the timber country the lumberman is fast depleting these original forests of their product. But it is also found that a replanting and a second growth of these same kinds of forest trees will so accommodate themselves to the present conditions in which they are called to grow, that they will soon show a healthy progress. Having had some experience in this planting, and more particularly in the planting of seeds and seedling trees, to rear for propagating forest timber, for lawns and groves, and belts of timber growth for the farm, I have found it all to be of such practical utility and so quickly and easily accomplished, that I would urge it both as a duty and a pleasure for any one who can have the opportunity to practise it, and will state some of my experience in forest propagation, from the gathering of nuts and tree-seeds for planting, to the rearing of the full crop of forest growth. First, if one will notice certain trees now (April), whether in the forest or along the streets of any town, they will see that the buds on many limbs (especially the upper ones) of the soft maple, and the native white (or drooping) elms, and some few other trees, are much swollen. This is for bursting into bloom for growing a yield of seed, which will mature and drop from the trees about the middle of June. As the leaf-bud does not come on until some time later, we may expect, if we see these first buds, that the seed will come in due time; and as there are two very desirable kinds, both for graceful and rapid tree growth, arrangements should be made early for securing and planting their seed when it first falls to the ground. The single winged seed of the soft maple every one is familiar with, though not every one knows that there is the proper time for planting it, but the small scale-like seed of the elm is so inconspicuous that it might be overlooked. This matures about simultaneously with the maple, and to plant them one should prepare ground, about as he would for carrot seed; gather the seed by scraping or sweeping it up from under the trees, and dibble it into rows prepared by slight trenching, and cover lightly. If the ground is moist, they will soon grow, and need about the same care the first year as carrots would, and their growth will be from a foot to a foot and a half the first season, when, if they stand pretty thick in the rows, they should be transplanted, to grow a year or two more before being permanently set for the grove. This resetting of all trees or plants greatly increases their chances in transplanting, by multiplying the number of their small fibrous roots. The seeds of most of the other of our native forest trees mature their seed in the autumn, and depend largely on the moisture and frosts of the following winter, to prepare them for growing when the proper season arrives in the spring. Especially is this the case with acorns, chestnuts, and the product of all the nut-bearing trees. The basswood, or American linden tree, is a rapid grower, gives a clean and dense foliage, and when in blossom yields abundant food for the honey bee, besides a valuable lumber used in the manufacture of cabinet ware and carriages. Its seed is about as large as the field pea, and can be gathered from the tree, at about the time the leaves fall, or later; can be collected from under them, and slightly raked into the garden beds, to grow the following season. The plant at first starting shows two glossy leaves about as large as six-penny pieces, but a strong stock, and its next pair of leaves are plainly of basswood. The rock elm, and hard, or sugar maple, the ash and beech, all want treating in about the same manner to raise their stock from seeds, but unless an unusually large number of these were wanted, it would be found to be very practical to go into the forest where these various kinds are growing, and in the spring when their buds are swelling, so that the kinds can readily be distinguished, pull what amount is wanted of these seedling scions, which are usually found in abundance, that grew the year before to about the size of a knitting needle. These being reset to nursery rows, will make, after two or three years, good stocky trees for the plantation. None of these trees seem very particular as to the soil they grow in; but it is noticeable that the soft maple, the white elm, and the American arborita, or white cedar, all of which in their native home are found occupying rather low, moist ground, are found to be very hardy, and make perfect specimens of growth on any high, dry land on which the planter may choose to put them. But a different course of treatment will be required for the nut-bearing trees, as they have a tap root. It is desirable to plant their seed in the same ground and place where its future growth is to be, and thus avoid their transplanting, which is always a hazardous and laborious job for this species of tree. Yet in case of necessity, one might undertake to reset these at one year's growth, though that is not to be recommended. Therefore, acorns, chestnuts, walnuts, butternuts and the like seeds of nut-bearing trees, should be gathered soon after falling and either planted directly where they are to grow or spread on the ground, say near the house, covered slightly and left to the action of the winter's frost, which is nature's way of opening their shell so that they can grow. If they are planted in the fall, the rows or hills should be marked so they can readily be found the next spring, so as to nurse and care for them when they first come up. The most practical way to manage that is, if planting in a black soil, to draw a load of light sand loam with which to cover the seed. This will effectually mark it and will facilitate the first tender growth of the scion. But if the other plan of not planting until the spring is adopted, then be sure not to let the nuts get uncovered and dried before being planted. In spring, prepare the seed bed nicely as for turnips, and when the seed shows signs of sprouting plant them out, and till them through the season about the same as corn culture requires; and for a few following years, either such tillage, or a mulching of these trees will be found very beneficial. To do this the more readily, whether for a single row or for a grove plantation, I prefer to lay out the ground for planting to corn or potatoes, always planting the trees in one of these field rows, so as to take its tillage with the rest of the planted crop. After this seed down the ground (to orchard grass is preferable) and mulch well about the trees, trim them up from year to year, taking all the lower limbs off, to favour an upward growth and straight, smooth-bodied trees. This trimming I follow up until the trees are twenty-five or thirty feet in height, being a growth which acres of my trees have attained in sixteen years from resetting in groves. The oak and walnut are twelve to sixteen feet high, in ten years from planting their seed in the ground, and many of the black walnut trees have borne nuts two years already. For these groves I prefer to plant the rows one rod apart, and one or two plants to the foot, at first. Then thin out and save the best plants, one to every two or three feet in the row. Then, after two or three years, thin out again by taking some to fill any vacancies in the rows, and others to plant out on the lawn or along the border of the highways, or to sell (as I have done enough from a grove of two and a half acres, to pay for the land, and all the cost of rearing this timber growth on it); and I might add that this grove, containing nearly all varieties of our native forest trees, and planted out to take the place of the old wood lot of seven or eight acres which seemed to be fast failingme, and set about sixteen years ago, has done so well that years ago I cleared off the old wood lot, and this grove, with what I have planted from it along the road, and the line of lots, is showing a better timber growth than many farmers have in their ten acres of original forest lot. No system of forest propagation is complete without its varieties of evergreens interspersed, but for their production it will require about the same management as for the others, as above described. But for a farmer or for a government to preserve and replenish their native forests, the old trees should be carefully removed, giving place to a new growth and a planting in of seedling trees, and the planting of acorns and nuts to add to the varieties and fill up the stand of timber growth where it is too light. This can be easily done and will prove quite effectual for the object desired. Then these plantings may be safely left to care for themselves for future development. This will be found the most practical and economical way in making any expenditure in forest preservation.

To recapitulate my own experience in propagating forest timber for timber purposes, in groves, and blocks, and wood-lots, I would say, it has mostly been in the planting of four groves, ranging from a quarter of an acre to two and a half acres, besides rearing two second-growths of native timber of its own replanting, after removing or clearing off its standing crop, one of five acres, and one of twenty acres. · After growing the seedling stock, as before described (all except the nut-bearing kinds), I take them at from three to six years of age to plant for the wood-lot, with the rows to be one rod, or say fifteen to twenty feet apart; but as the ground would bear four times as many as four to the square rod, until ten to twelve years of age, I plant them only four or five feet apart in the row. This in their early growth is a great advantage in carrying them upright and straight; but after six to ten years every other tree should be removed, and then after another term of years, as it is found desirable, remove every other one again, reducing the standing timber to about one tree to the square rod. This, from my experience, I believe to be a fair allowance for growing a full crop of timber from the land, of soft maple, or ash, elm, basswood, chestnut, or any of these fast growing kinds. But of hard maple, or oak and hickory, as well as for pine and cedars, some forty years is a better allowance for growth. But by still farther thinning out, the growth of those remaining might be continued for a century or more. As my principal experience is in attending such groves up to sixteen years after setting out, I find the fast-growing ones want reducing to one to the rod after ten to twelve years, but at that age hard maple, hickory, oak and the like, were doing well two to the rod, being thinned out to one to the rod at fourteen or fifteen years (from seed). All the tilling and tending they have required consisted in trimming, and in the first years of tilling (as described), then seed down and mow or pasture. But as I found at first that this rather checked their growth, I remedied it by mulching. For about an acre I drew on several loads of old straw, covering all the ground for about a foot after being trod down. This proved so favorable to their growth that it showed plainly for years, and after four years they had attained about once and a half the size of the other rows. This mulch lasts until these trees, by their shade and their fallen leaves, do completely mulch themselves, and now these trees, (at sixteen years), stand about thirty feet tall, and many of them six to ten inches in diameter, and have already furnished many loads of fuel from the thinning out required. I have always preferred to plant the several kinds separate--that is, a given number of rows first to one kind and then to another—only that as the grove was thinned out the last time, a cedar tree was put in place of the one removed, which filled up the undergrowth with an evergreen. At eight years of age the black-walnut commenced to bear nuts, but the oak has not borne yet. The maple will soon answer to tap for sugar-making. I must not forget to say that the fields adjoining these blocks of timber have shown a better crop growth for the shelter and protection thus received.

The most artistic and prettiest work in tree-planting I ever did was in planting a grove of 160 maples (enough for a sugar orchard) in the above plan of a spiral coil, containing, as you see, only one row of trees, and the trees at a given distance apart in the row, but showing from without only a round grove of promiscuous planting, thus avoiding the stiffness of set rows. To lay this out for rows of the coil 12 feet apart, stand a hogshead of four feet diameter on the centre of the patch to be planted, wind a strong line several times around this, then with a marking stick attached to the end make a mark over the ground at the full stretch of the cord as it is unwound from the hogshead, continuing it to the full size for the grove; then plant the trees at given intervals along this line (as seen by dotted line in draft); this at twelve feet apart in the row will give about 300 trees to the acre, and I can drive a carriage into my grove, as by the small line marked into this plan, and from the centre drive six times around and out again. This stands as a beautiful ornament to the landscape and premises.



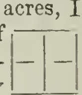
For the cedar and pine growth referred to, I gather the small seedling plants from their native bed, reset into nursery rows until sizeable for the forest growth, then treat as others. Of the second growth of native forest referred to, one has now grown about thirty years, and at twenty-five years' growth was estimated to yield 100 cords stovewood to the acre, but for years I have cut hundreds of cords by thinning out its growth. The other is now of ten years' growth and doing well.

EXPERIENCE IN THE NEW ENGLAND STATES.

I have received the following from Mr. Fay, of Boston, well known for his successful labors in tree-planting in the New England States. The principal method which he has followed has the merit of remarkable ease, being simply to scatter the tree seed on the ground without preparation. Owners of some of our waste lands will perhaps see their way to imitate him in this. Another idea mentioned is excellent, namely, that of removing the young pine trees scattered over a field to one small enclosure. As my readers are aware, the principal trouble in transplanting the pine and all its variety is that if the roots be dried by either sun or wind the resinous matter is apt to harden, circulation is stopped, and the tree must die. In removing from point to point in the same field, however, this need never occur :

I have made extensive plantations of forest trees, both by seed and from the nursery. A good deal of planting has been done by seed in my district (Cape Cod) and very successfully, for the greater part with pine.

My own planting, commencing some twenty-five years ago, has been from the seed to the extent of 100 acres or more. It has been done on treeless old fields and pastures, in lots mostly adjacent to each other, of ten to twenty acres each, enclosed by stone walls, with cart or cattle ways through them. Were I to plant a block or square of 100 acres, I should divide it into four parts by a blank space running through and across it of 100 feet wide so as to guard against a sweeping fire, and to give a chance of restricting its ravages to the section in which it might begin.



My plantings of seed were by sowing them broadcast on the swards in March or April, perhaps on a light fall of snow, and leaving them to nature. This has been entirely successful, but they have come up too densely, requiring thinning. Some of my neighbours plant by sticking a hoe in the soil. Some by running a light furrow and dropping the seed there four or five feet apart, covering slightly if at all. This is an economy of seed but more labour, and by knowing where they were dropped one can more easily tell if the seeds germinate. My trees, planted as I have said, are now fifteen to twenty-five feet high, making quite a forest, and very thrifty, thinned out by hundreds of loads of cuttings to about seven feet apart on the average, and ought to be thinned again. The kind of seed I have used has been the native pitch pine, the white pine, and the Scotch pine, mixing some Austrian and Corsican pine and Norway spruce. But so far I have found the Scotch pine to do the best, and of that I have planted most, though I question if it will prove as valuable a wood for timber as some others. It is a fast grower, hardy and thrifty. The native pitch pine has been subject to a fungus or blight which destroys it, while the white pine is not suited to the salt air of the seashore. I have planted pine because the previous or general growth was oak and hickory, but I have no doubt that any of the hard woods would do as well. The Norway spruces have germinated and grown very well, and I should recommend them.

In the way of planting out with the spade from the nursery, I have covered many acres, probably at least fifty, in forming ornamental woods and shelters and groups, setting out many thousands of trees with eminent success. At first I imported Scotch larch, Scotch birches and sycamores, with Scotch and Austrian pines and Norway spruce from England, and planted them out in the fields or openings in older woods, about seven or ten feet apart, and now they are in twenty-five years fine trees, making at least seventy-two inches growth in diameter at the butt, and one foot high per annum. In fact the Scotch larches and birches have made three-fourths inch diameter and eighteen inches' height per annum. Some of them now fit for railroad ties. Some of the white pines in *sheltered places* have done as well. My land is poor, being drift (sand and gravel) with a little loam, hilly and exposed to violent sea winds for the most part, yet the growth has been very good.

Of late years I have been getting larches and some other trees (twelve to fifteen inches high) from Messrs. Robert Douglas & Son, Waukegan, Illinois, which I have planted successfully. The trees are less likely to heat in the transit than in coming from England. I have obtained the red pine (common with you) *(Pinus Resinosa)*, called in New England; the Norway Pine, from Michigan of late, and think that I shall find it the best, as it is the most beautiful of all the pines except the white. I am also planting the yellow or cherry birch, and the paper or canoe birch, which I get from Michigan, and I am sure that in rapid growth and in the value of the wood they will prove very desirable. One of my children planted last spring 10,000 white ash trees got of Douglas, three by three feet apart, expecting to thin them at ten feet high for poles, etc. These are planted by themselves as an investment. I have, as a rule, mixed my nursery planted trees for effect, except four or five one-acre blocks of larches, rather than with a sole view to profit, and I am making additions of various trees yearly as experiments as to climate, soil, etc.

Seed planting takes the least labour and capital, but planting trees brought from nurseries at one-fourth to one-half cent each saves two or three years of time. The trees planted seven by six feet apart, or 1,000 to the acre, are too near for a permanence, but my land is so exposed that by close planting they shelter each other till they are ten or fifteen feet high, when they ought to be thinned. They should not stand for timber nearer than ten or twelve feet apart, I should say, and then depending somewhat upon the kind of tree and its habit of growth. I have seen very good results in our State (back from the coast) by taking up the seedling (volunteer) white pines, scattered over a pasture, or by the road side, setting them in a body at regular distances on a field, and leaving them to grow. In a very few years they have been ready to cut for boards, and have paid a large profit on the labour, value of land, etc. I have never made any preparation of my land but have planted my trees, or sown my seed on the ground, and left them to nature. My seed I have procured from England or France, but they can be got of the seedsmen in Boston or New York, or of R. Douglas & Son, Waukegan, Illinois. Larch trees did not grow from the seed, broadcast, only here and there one. I suppose because the soil was poor and dry, and they could not, after germinating, resist the hot sun. The pine sometimes fails in a dry hot season, though the grass usually gives them shade enough. When raised in nurseries they require to be shaded the first year and until the hard wood forms in the second year. In my opinion nothing can be more profitable in the use of land of ordinary quality than in planting the seeds of forest trees or even in transplanting trees from the nursery or way sides to vacant spots.

Dr. H. A. Cutting, Lunenburgh, Secretary of the Department of Agriculture, Vermont, sends the following concerning sugar orchards in that State. It is time that, in Ontario, we considered whether wind-breaks of such trees, say seven or eight rows broad, along the north and sometimes the east or west sides of farms, according to exposure, would not be profitable, considering the amount of sugar which could for many years be obtained from them. In this volume many instances will be observed, giving the growth of maple trees when planted alone, but it should be remembered that, if planted in rows, say five feet from tree to tree each way, and slightly cultivated yearly, so as to keep the land mellow and free from weeds, trees will grow with almost double their rapidity. They have two advantages, the whole ground is shaded over the roots—a thing loved by the forest tree; also, in trees growing in mass, there is an emulation to overtop, which draws the whole upward. They can afterwards be thinned to any desired distance.

There have been some sugar orchards set here, and they have proved profitable. One I have in mind has been set fifty years. The trees are large and productive. Others have been set thirty years; they do to tap in from fifteen to twenty years, and from thirty to forty years from setting become very profitable.

WESTERN STATES PLANTING.

The following is from Mr. C. M. Culbertson, of Northern Illinois, describing his success in planting walnut trees. It will be noticed that, having a farm of 2,300 acres, he has grown walnut trees on ten acres which he expects will, in a short time, be worth as much as the rest of his farm; in other words, he has doubled the value of his farm. Instances like this—for this is by no means a solitary one—show distinctly how mistaken the idea that the planter of forest trees can expect no return in his own life-time. From certain instances which are narrated in other parts of this volume, the reader will find reason to believe that walnuts, for instance, will grow as well in many parts of Ontario as in the States. The soil, of course, should be suitable. The walnut would die on a poor soil which, nevertheless, would be exactly suited to the growth of pine. Mr. Culbertson does not state the nature of his soil, but in travelling through lands in his locality, it seemed to me to be generally of a rich and deep loam:

In the spring of 1855 I broke some raw prairie land in Douglas County, Illinois. In the fall of the same year I planted about ten bushels of black walnuts as they fell from the tree (with the hull on), in the manner following: I took a common shovel plow, and marked off the ground in checks ten feet apart, and planted one walnut in each check, making the planting ten feet apart each way. They all sprouted and grew. I tended the field in corn for several years. After two years the side limbs should be cut off yearly for several years. When ten years old every alternate tree should be cut out; after that keep culling out the smaller trees from year to year as they show signs of falling behind (in growth) of other trees. Keep this up till you cut out three-fourths of all you planted, when you will have a stand of trees of uniform size and vigour. You will find after about eight years' growth that no planted crop of grain will grow among the walnuts. The ground will be so shaded that it ought to be put down in grass. I have a grove of fifteen acres of black walnuts planted and managed as above set forth.

The sizes now are from about 10 to 18 inches through at axe cut. They are straight and without limbs for from twenty-five to forty-five feet from the root; some of them eighty feet to the top. I am still cutting out the weakly ones in the month of June, and peeling off the bark and piling them up and drying them, then using them for cribs, bridges, etc. My grove of walnuts are now considered very valuable, and in a few years are likely to be worth more than the balance of my farm of 2,300 acres.

The following, received from Mr. R. Douglas, the celebrated tree planter, of Waukegan, Illinois, who holds many planting contracts from railway and leading men, and has planted not merely many thousands but millions of trees throughout the Western States, will be found of interest. Soil and climate, no doubt, differ somewhat, but many valuable hints can be obtained from his methods of operation. Moreover, the States are the only place to which we can look for examples, as we have very few plantations in Canada, and European systems do not, in the instances I have had the opportunity of observing, answer here. Mr. Douglas, who, I regret to learn, is in poor health, sent two communications at different dates, but as both are valuable, they are given here. He says:

To be brief, we break the prairie in June when the grass is succulent, so that in August we can reverse the sod (not cross-plowed but plowed the lengthway of the furrow). We plow an inch or two deeper than the sod was broken, so that the ground looks mellow and nice; by the next spring this sod is so well rotted that the spade goes through it readily, so that all we have to do is to harrow the land and then mark it off with a corn marker four by four feet. A tree is planted at each cross section, so that they stand four feet apart each way. We cultivate them same as corn, with a two-horse corn cultivator, both ways, so that we do not use a hoe, but sometimes pull a few weeds close to the trees. We like to plant trees about one foot high, so that one spadeful of earth can be lifted and put back when the tree has been placed. In this way they can be planted very fast.

In order to establish the fact that forests can be successfully planted without the aid of experts, we took three contracts. Two of these plantations are in Crawford County, Kansas. We have already planted 500 acres on these two contracts and will plant 500 more acres before the first day of May next. These trees are planted by ordinary laborers, superintended by a man who never worked a day in a nursery. They are planted with spades, and stand four by four feet apart, the ground having been marked out same as for corn. One man or boy holds trees for two planters, and the three together average 4,500 trees planted in a day of ten hours. We plant 2,720 trees to the acre; our contract calls for 2,000 trees to the acre; they stand over 2,500 to the acre. They consist of three-fifths Catalpa Speciosa and two-fifths Ailanthus. The Catalpas three years planted stand from six to ten feet high and two to three inches in diameter at the collar, shading the ground so as to need no further cultivation. On the richest land they shade the ground after being two years planted.

As these trees are planted by farm hands and cultivated with common corn cultivators, it proves that any farmer who can raise an acre of corn is competent to grow an acre of forest.

In order to establish the fact that the very poorest lands can be profitably planted to certain kinds of forest trees, we purchased several hundred acres of sand ridges and blowing sands on the western shore of Lake Michigan. We have succeeded with Scotch and Austrian pines on blowing sands, and white pines and European larches on sand ridges sparely covered with a vegetation of bearberry, rotentilla and trailing juniper. These trees occupy about two years in extending their lower branches to cover the sand and then throw up leaders almost as rapidly as if growing on good land. This experiment was not made by planting a few of the difficult kinds of trees on a few acres, but by hundreds of thousands of trees on three to four hundred acres.

Aside from the above we hope to succeed with a few others. While we have succeeded beyond our expectations with the above, we must confess we are disappointed with some others. Pitch pine (*Pinus Rigida*) stands less than two feet high, while Scotch Pines, planted near by and at the same time, stand six to ten feet high.

Pines, ponderosa, red pine and table mountain pine are among the failures; also spruces, firs, arbor vitæs, and red cedars. Also nuts, including black walnut, butternut and chestnut. Also maples and box elders, and many others. These tests were made thorough. Tens of thousands of many of the kinds were used where not one tree made a satisfactory growth.

Trees planted west of the lakes on such barrens cannot be expected to succeed so well as further east where there is more moisture in the atmosphere. Our hot winds in August and parching winds in winter are too severe for many trees that would survive in the Eastern States in the same latitude. The Ailanthus is hardy in 42 degrees in Massachusetts; here it will not endure the winters north of 40 degrees. Where the Ailanthus will endure the winter it is no doubt the most profitable tree to plant on barrens.

We have planted over 1,000 acres in Kansas alone aside from other plantations. We prepare the land same as for corn. Four by four feet apart, I think, is the best distance to plant; consequently we mark off the land same as for planting corn, and plant the trees at the intersections of the marks; we plant with spades. In that locality we think Catalpa Speciosa, and Ailanthus Glandulosa the most profitable trees to plant. Trees five years old stand fourteen to eighteen feet high, and from that down to three feet at one year's planting. We cultivate with corn cultivators till the trees shade the ground, when they need no further care till they need thinning out, where they crowd each other too much; they need no pruning, as the close planting shades and kills out the lower branches. In Upper Canada, I would recommend planting white ash, wild black cherry (*Cerasus serotina*), black walnut, (black walnuts in the southern part of the Province), yellow birch, white pine, European larch. These are among the most valuable kinds and rapid growers. The black walnut should be intermixed, say the sixth tree in every sixth row; this would make them stand twenty-four feet apart after other kinds are removed, the white pines every third tree in every third row.

The ash, cherry, and yellow birch should stand eight by eight feet, filling in with silver maple and box elder. The two last named should be thinned out first so as to leave the black cherry, ash, yellow birch, etc., standing eight by eight feet, I would like to write more fully but dare not. All the trees named except the white pine, and larch and birch, can be planted at one year old, selected twelve to fifteen inch trees.

P.S.—Of course broken land or the sides of ravines, etc., can be planted according to circumstances, but where the land cannot be plowed, stronger trees would answer a better purpose.

The following, forwarded me by the kindness of Mr. P. C. Reynolds, gives a valuable instance of a plantation from Mr. Douglas' seedlings :—

In 1879, in pursuance of my practice since I have been the Rural Editor of the *Rural Home*, I visited a farmer in Genesee County, N.Y., named Peck. I copy for you a portion of my notes of that visit : " We came to a ten acre plantation of European larches and Scotch pines. We first entered his last planting, transplanted four years, the seedlings two years from seed. He purchased the seedlings when one year old of Douglas & Sons, of Waukegan, Ill., planted them in nursery rows one year, and then transplanted them in forest, four feet each way. A smart man will transplant 1000 a day. An acre will contain 2,640 trees. Those transplanted four years were from eight to ten feet in height, very vigorous, branching, and with trunks from one and a half to two inches in diameter at the surface of the ground. Those that had been transplanted six years were from ten to twelve feet high and more than three inches in diameter. Over to the west side some that had been transplanted eight years ranged from eighteen to twenty-four feet in height and four to six inches in diameter. Every sixteen feet, each way, a Scotch pine had been planted, and, although not as large as the larches, they had made a healthy, vigorous growth. In a very few years he can begin to thin out the larches, using them for poles and fence posts. The soil is far from fertile, being clay loam, with a shale rock near the surface."

I have given you the main points of my observations of Mr. Peck's forest plantation, which is the largest one I ever saw. I have seen small groves made up of a variety of orest trees that were flourishing.

Mr. Henry Wallace, of Des Moines, Iowa, sends the following. As will be noticed, he favors wind-breaks of seven or eight rows planted closely. There is this to be said in its favour, that the four centre rows being shaded by those outside, would probably produce valuable timber, as if, in fact, they were in a dense forest. The timber would not be so long and clear as that of the actual forest tree, but would be more tough and durable :

The groves planted throughout this region are in rows about five feet apart, trees in the row about four feet.

I am planting this spring in rows five feet apart, and three in the row, intending to remove every other row when large enough for posts This is the way I plant all soft wood trees, as they make a magnificent wind-break, and the wind does not break them. The current of air rises on the grove and leaves a calm in the grove and leeward side.

The same practice is followed with hard wood trees, such as ash, catalpa, and black walnut. Of course trees are planted in rows along roads and around fields, but for a wind-break or shelter for stock in winter, or protection to buildings or orchards, the way is to plant eight or ten rows five or six feet apart and three or four feet in the row. The trimmings when fuel is scarce will pay well.

Mr. E. D. Porter, Professor of Agriculture, Minnesota University, gives interesting particulars concerning the effect of the timber culture laws in that State :—

During the past year I have had an opportunity of observing the result of our National

" Timber Culture Laws " in this State and Dakota, and have been very favourably impressed with the results of the work of tree planting, where it has been done with the least regard to the conditions essential to success. I find blocks of five, ten, and fifteen acres of trees dotting the prairie, now from ten to thirty feet high, where five years ago there was not even a shrub visible. I look out of my study window now and see cottonwoods sixty to seventy-five feet high and two feet in diameter, and balsams, Norway spruce and maples forty, fifty and sixty feet high, all less than thirty years old, showing what has been dnoe by common farmers, and with the least ordinary attention.

Mr. C. W. Hall, Minneapolis, writes concerning Minnesota planting. It will be observed that the instance of pine which he considers rapid growth, is not at all as rapid as some noted in Ontario, hence it may be thought that—the proper trees chosen—our climate is the best for tree-growing :—

I have seen in a few places here and there, through the southern and western parts of our State, clumps of trees of a few years growth. They are largely set about the farm buildings, apparently as much for protection as with any view to growing a permanent timber supply for the farm. The species most noted are the cottonwood, the box-elder, and the white willow; and I should judge, nearly in the order named, so far as quantity is concerned. Some agitation has been observed over the black-walnut and the maple—the soft maple is frequently to be seen—but I have no personal knowledge of these trees being planted in clumps. The favorite mode of planting is a row around the farm, or a convenient part of it. In all the prairie portions of the State, as far as my observation goes, all the above named trees grow rapidly, and are easily started under intelligent management.

On enquiry of Mr. M. Pearce, a nurseryman of this city, I learned that in 1827 a few acres of white pine were planted in Wabasha County, and the trees were doing remarkably well, being now fifty feet high. They were planted in the ordinary prairie soil. Mr. P. assured me the white pine and the European birch were to be the trees of the future here in Minnesota ; and that following these were the box-elder, the cottonwood, white and rock elm, ash, and sugar maple, about in the order named. The last one was very rapidly coming into favor, and would possibly outstrip some of the others.

While quoting the above valuable instances from the United States, it may be remarked that in some of them forestry has, under State auspices, been much longer studied than it has in Canada. It may be well, therefore, that, choosing places where soil and climate are not very unlike our own, we notice what trees and what methods are recommended by their State organizations, so far as they relate to trees which are known to thrive in Ontario. Some of these coming from the prairie countries will have special interest for those in our North-West and newer territories. The following are from the pamphlet issued by the State of Iowa, and I observe it largely quoted as valuable and correct by the leading forestry men throughout the United States :

WHITE WILLOW.

This tree is being extensively planted as a combined stock-barrier and wind-break—but few trees have been planted as yet in timber belts—in fact the general impression, even of the friends of the willow, is that it has little value either for fuel or any other use connected with farm improvement, aside from that for which it has been so extensively planted. In Europe, however, the White Willow is regarded as a valuable timber tree, and the time will come when it will be so regarded in the prairie States. We have become so wedded to the use of pine lumber for building purposes that the idea of using the poplars and the willow in its place, grown on our own ground, and cut up with cheap portable mills in our own yards, we are slow in acquiring—but with the coming scarcity, and advance in price of pine lumber, *we will become more teachable.*

It grows rapidly, often to the height of thirty feet in ten years, and attaining a height of over eighty feet.

Large cuttings planted in spring or fall. as with poplars, furnish the easiest method of starting the grove, or the combined wind-break and stock-barrier.

Perhaps no tree raised in the North-west will produce as many cords of wood to the acre in a given time as this, and the readiness, vigor and rapidity of growth with which it reproduces itself from the stump when the top has been cut off, as well as the adaptability of the timber to various farm uses, recommend it for extensive planting. No one of our trees will, like it, make a live fence and a fence from which you can take stakes, poles and fire-wood, without weakening the fence as a stock-barrier.

WHITE POPLAR.

This beautiful tree is usually voted a nuisance as an ornamental or shade tree, on account of its wonderful tendency for suckering.

In groves, this habit would prove no drawback to its culture—it is probable that we have no tree that will reach saw-log size as soon as this. Trees in this State are plenty, two feet in diameter, with a growth of only fifteen years. Isolated trees head low and have wide, spreading tops. In groves, it runs up tall and straight, and the poles taken out in thinning reach a size suitable for nailing on fence posts, and even for rafters and sleepers in astonishingly short time. If cut in summer and peeled, they prove durable for these purposes, where kept from the ground, and they are very strong.

It may be propagated by slips, suckers, or by branches five or six feet long and two or three inches in diameter; where the latter are used, the larger end should be sharpened by a sloping cut on one side, to expose the bark, and set fifteen or eighteen inches in the ground. The disposition of the tree to sucker would be no objection in forest culture.

We urgently recommend this tree for extended planting in outside belts, on our most exposed prairies. It will prove immensely valuable in the near future for building purposes.

WHITE PINE AND LARCH.

These well known trees are placed together, as many experiments at the West have demonstrated that they are mutual aids to each other in growth, and on the prairies we have special uses for the larch poles, when it becomes necessary to cut them to give room for the development and growth of the pines. But few of our prairie settlers realise how cheaply they can now start an acre or two of these valuable and really quick-growing conifers. Aside from intrinsic value for timber, such groves prove good investments in the way of breaking up the monotony of prairie scenery, and as places for pleasant resort for stock in winter as well as in summer.

The most profitable mode of planting is to set the plants in rows four feet apart. Every alternate row is planted exclusively with larch, three feet apart in rows. In the row in which pines are planted, they stand eight feet apart with a larch planted half way between. When the arch poles are cut, the pines stand eight feet apart both ways.

As to the kind of larch, the European has given best satisfaction in growth, but do notl hesitate to plant the American variety if good plants can be obtained cheaply. Those from Wisconsin have grown as fast as European, and the poles are just as durable. Prepare the ground for planting in the fall, and put out the larch plants *just as early in spring* as the ground can be worked. They start very early and at a very low temperature, and are very apt to die or be seriously set back, if started before setting.

In handling the young pines, if the tops are clipped quite severely, they will be more certain to do well. Do not expose the roots *for a single minute* to air or sun. If other conifers be mixed in the plantation, it will add to the beauty of the ground. The relative value of the conifers for shelter-belts and ornamental purposes, is considered in the annual reports of the Horticultural Society, a copy of which should be in the hands of every prairie farmer.

THE ASH.

We do not hesitate to say avoid Eastern grown seeds. At the nearest place gather seeds without thought as to species, except in the case of black ash, which is distinctive and well known.

Spread out the winged seeds on a smooth, hard patch of dry ground, not more than four inches thick, cover with straw, with boards on top to keep off most of the snow and rain; sow early in spring, if possible where permanently wanted. Mark out the ground one way, as for corn, in rows four feet apart, plant four or five seeds in a hill, every two feet in the rows. A few days later plant small sweet-corn, or Yankee-corn, in the spaces between the points where the ash seeds are germinating. Start the cultivator as soon as the plants can be seen. While the plants are making a start, go through with a hoe to keep down the weeds. In a very few days the two-horse cultivator may be run as close to the ash plants as to the corn. Leave the cornstalks on the ground to hold the snow the succeeding winter. The surplus plants may be used to fill vacancies. If you call the plantation thus started White, Red or Green ash, you will soon find, with good care, that you have a young grove of which you are proud.

BLACK ASH.

Nature plants this useful tree as she does the larch, in swamps, along ravines, in moist rich bottoms, and quite rarely on rich second bottom lands. It does not prove profitable to plant it on dry ridges, nor indeed is it best to put it in full rows, in plantations running from the edge of ravines to higher land. Plant low moist patches, wherever they occur, with Black ash. On such grounds, with culture when young, this ash grows rapidly and thriftly. Plant very closely in the rows and utilize the poles in thinning for hoops, splints, stakes, etc. With increased size the poles are strong and durable nailed on posts for fence. This ash, like all the others, is noted for vigorous sprouting from stump cut in winter.

W. L. Brockman, of Carroll, Iowa, recently pulled a Black ash sprout, of one season's growth, ten feet high.

Propagate same as White ash.

BLACK CHERRY.

Contrary to usual belief, this tree grows very rapidly on our richest prairie soil. In the early plantations of timber trees, near Elgin, Illinois, a tree of this kind has a circumference of sixty inches one foot above the crown. It grew from seed planted twenty-six years ago. Trees in groves in eastern Iowa, fifteen years planted. are fully as large as Soft maple of the same age, though for the first eight years Soft maple attains the greatest diameter, but the least height. In response to request, Dr. Warder, of Ohio, sends a paper on the desirable points of this tree for culture, to which attention is directed in the Iowa Horticultural Report of 1878.

Several correspondents have admitted the value of the timber for fuel, and its probable value in the near future for manufacturing and cabinet uses ; but complain that it does not come up to recommendation in durabilty for posts and stakes. As with the elm, larch and black walnut, if the posts are set green, this complaint is well founded ; but if the bark is hewn off from the lower ends, and from two sides above, and the posts are set up for seasoning one year they become durable as post timber.

The black cherry produces an abundance of fruit while the trees are yet small. Under culture the size and quality of this fruit is much improved.

Cherries for seed may be gathered by being shaken on to sheets or blankets ; to preserve them through the winter, mix thoroughly with sand, place in shallow boxes and bury slightly on north of a fence or building, or place the boxes in the cellar. In the spring they germinate at a low temperature, and must be planted early. They make trees far more rapidly if planted where wanted, as advised for the ash ; they transplant well, but, as with most of our fruit trees, much is lost in health and rapidity of growth by disturbing the first tap-root. If planted in hills put three or four pits in a place and save the best plants the next spring.

BLACK WALNUT.

Each season we acquire new bits of experience as guides in the labour of tree-planting.

Careful observations during the past two years in the prairie States convince us that the black walnut makes most rapid and healthy growth on our prairies richest in humus, and yet having a porous sub-soil, so that it will not suffer in extreme seasons of wet or drought.

Another fact in relation to its growth has become apparent which will be important for planters to remember : where blue-grass has been introduced it is sure to get in and ruin or sadly injure the trees when planted alone in groves, unless culture be kept up more years than it is profitable. This special liking of the blue-grass for the black walnut groves results from the very late period in the spring when the foliage is fully expanded, giving the blue-grass such a start that it matures its seed. In Illinois this has become such a drawback in the culture of this tree that it is now being planted in alternate rows with some tree coming into leaf early in the season. Soft maple and box-elder have been used to good advantage for the alternate rows, which must be taken out in whole or in part for fuel, when it is evident that they are seriously injuring the walnuts. With this treatment the walnuts will run up faster and straighter than when planted alone, and they will be free from grass.

Judge Whiting gives this opinion as to value of timber for posts, and mode of keeping and planting nuts :

It is very durable, if put in the ground dry, for posts. Fifteen years ago I planted cedar and walnut posts at the same time, and also posts of white oak. All are now decayed about equally. Always plant the walnut where you want it ; will transplant well, but loses, in losing its tap-roots, years of growth. Seven bushels of walnuts, with the shucks on, will plant an acre. During the winter I put in trenches, not too thick, and cover with leaves.

Plant before sprouting, if possible. Make the ground as for ash, and plant the nuts early and deep, so that they will not dry.

BUTTERNUTS.

This well known tree of the Northern States does well on about all our varied prairie soils, either in groves or planted singly, if in not too exposed positions. Western experience makes it certain that propagated from seed, with culture when young, the nuts may be much improved ; as the shell becomes thinner, the kernel becomes larger and richer and it is much easier taken from the divisions of the shell.

When dry, the wood lasts well for posts, and the poles, when large enough to split, where they run up straight in the close plantings, are durable and strong for fence rails. The nuts are prepared for planting and are started the same as black walnut.

HONEY LOCUST.

This fine native tree has received more attention in Europe than here. It has there sported in distinct varieties, with extremely varied habits of growth. This tendency to variation is exhibited in growing its seedlings, and we even notice that our native trees are varied in time of flowering, color of petals, habit of growth, and even in hardiness of tree when grown on the prairie. Our correspondence continually indicates a common belief that this is a true locust, and that like the black locust, it is noted for sprouting and liable to the attack of the borer. We wish to repeat that it *does not sprout* any more than the maple, and that no form of insect has yet molested it, except a long-necked beetle often found on potato vines, called by Harris, *Cantharis Cinerœ*. Plants in nursery and young hedges are sometimes set back by these hungry fellows at work on the foliage. The only effect, aside from a brief check in growth observed, is that the plants so treated become more thorny than those unmolested. We have experience with this timber as a fence material dating back near twenty-five years. Fence rails of that age, made from tough native timber, nailed on posts, have outlasted three sets of posts and two sets of red oak rails, and the locust rails are yet mostly good. These rails were split and nailed on in June and July. Posts made from native timber, seasoned one summer before setting, mixed with white oak posts treated in the same way, lasted equally well. Some *long* honey locust posts in this fence, when rotted off, were inverted, and lasted ten years longer in a new fence. It is well to say that young timber rapidly grown on our rich prairie soil, will in no case prove as durable as that of our old native trees. But recent observation in the groves of Illinois of twenty-five years' growth, makes the fact evident that as growth is impeded by standing *thickly* and complete occupancy of the soil by roots, the proportion of sap-wood becomes small, and the heart-wood becomes firm and dry, as noted in thick growths of the poplars. As fuel, the honey locust rates in value with the red oak.

The seed ripens in autumn, and may be gathered any time during the fall or winter; but the sooner pods are gathered after falling to the ground, the better. On most of the rivers of the State pods may be gathered in quantity grown on thornless trees.

Before planting, scald the seeds severely; part of them will swell; sift these out with a coarse fanning-mill sieve; scald the remainder again, repeatedly scalding and sifting until all are swelled. The ground should be ready and the seeds at once planted. They will come up in two or three days if the weather be favourable, and their upright growth is so rapid that less care is needed in picking out weeds from among the plants than with any other forest-tree seedlings. Keep the weeds down carefully with good culture during the summer; take up the plants in the fall and heel in carefully where water will not stand, or cover in seed-bed with a heavy mulch as soon as the ground commences to freeze. If left standing in seed-beds, the plants are often injured during the winter unless mulched. After the first year the plants are perfectly hardy, if seed from our native trees be used. Many of the plants produced from the foreign honey locust seed prove as tender in our climate as the peach tree. No valuable tree in our list bears transplanting with as little check to growth as the honey locust.

RED ELM.

If this elm be planted singly for lawn or shade trees on the prairie, its terminal branches are often covered with unsightly excrescences; but thrifty seedlings, in forestry rows, four feet apart, cultivated four or five years, will grow right along and show every sign of health and vigor. It is best, though, to plant outside rows to windward, with trees better adapted to the winter blizzards. Few realize the rapidity of growth, under culture, of this valuable tree. The writer has trees of six years' growth as large as box-elders of the same age; that is, not quite so large as the crown, but containing more timber on account of retaining size to much greater height. We have no tree with so great a proportion of heart-wood in young growths as this elm can show. In close plantations it runs up straight and tall, and when the poles are large enough for two rails they divide like the chestnut, and the rails nailed on posts are very strong and durable. At any stage of growth the poles are durable set in the ground if thoroughly dried before they are set. A very dry elm pole, set for a hop pole twelve years ago, is still standing. The red elm should be as popular as the soft maple. It grows as rapidly, is far hardier, it is freer from insect ravages, it is worth far more for fuel, it is excellent for rails and even posts, its lumber is valuable for stable floors, bridge plank, waggon hubs, and many other uses. The tree requires little, if any, care in the way of prunning, etc. If it could supplant the maple, the gain would soon be very apparent.

The seeds of the elm ripen in May; usually before the tree comes into full leaf. The seeds are light, and being surrounded by a membranous wing, they are widely scattered by the wind. Sow at once on gathering, and by all means sow where wanted, if possible. They may be planted in corn hills to excellent advantage. They usually grow to about one foot in height the first season. Planting with corn is an advantage, as the plants are sometimes injured when very young by direct exposure to our dry air and hot sun of July or August. The plants transplant readily, but if you want rapid growth, never break the first tap-root.

SOFT MAPLE.

This and the red maple are well known trees all over the prairie States where trees have been planted. It is unfortunate for our farming interests that it is so well known; a cord of its wood from young groves is worth but a trifle more than a cord of cottonwood, and it has literally no recognized value for any other use in the farm management. The older plantations demonstrate that it begins to decline in groves when about fifteen years of age, just when most of our trees of a better grade begin to make more rapid growth, and it is very liable to be broken off by strong winds.

Yet we say, plant the soft maple if it be found inconvenient to start more valuable species. When the crab-apple is in blossom is a good time to go for the seeds; plant at once in moist ground. If gathered where floating on water, all the better.

ASH-LEAVED MAPLE.

This is a tree of the far North-west, and planted in isolated positions on our bleakest prairies it yet maintains health and vigour. Its timber for fuel is far more valuable than soft maple. For other farm uses its wood has little value, unless, as in Europe, it becomes useful in cabinet work. For isolated shade trees on the prairies it has no superior, either as to perfection in health or symmetry and beauty of form. Trees suitable for this use can only be grown in thickly-planted belts where the stems are forced up straight. When transplanted where they have room, they soon form neatly rounded tops.

LIVE FENCE POSTS.

The straight trees from thick groves of box elder have a peculiar value for planting on outside or inside fence lines for posts on which to fasten barbed wires. They will outlast several sets of posts, and their beautifully rounded forms of top are objects of beauty in summer, and assist in breaking up wind-sweeps in winter.

Gather the seeds in the fall and keep under cover of boxes or boards until time for sowing, as recommended for ash seeds. Strong cuttings, put out in the fall, deeply, as recommended for the poplars, will usually make a fine growth the ensuing season.

OAKS AND HICKORIES.

If we plant acorns or hickory nuts, we hardly expect to realize anything from them in our time in the way of timber or fruit. The seedlings, as usually managed, are very slow in making an extension of top, but recent experimentation in this country seems to confirm the teaching of European foresters, that when properly managed in the nursery, these trees may be transplanted in safety, and will make a growth about equal to hard maple. In the spring, when the plants are two years old, the tap-roots are cut about eight inches below the surface with a sharp spade. This causes them to throw out lateral roots. If transplanted where wanted the succeding spring, both the oak and the hickory will start at once into satisfactory growth. The burr oak treated in this way in Illinois, and put in grove twelve years ago, is now about the size of the hard maple planted at same time.

The plan of growing these trees, outlined in the extracts which follow, from an able report to this Society, on "Tree Grouping," by Dr. John A. Warder, of North Bend, Ohio, are worthy of careful consideration :

"You may have felt some surprise that nothing has been said about hickories, and that only the schooled oaks have been named. Here comes in the last suggestion, and one which is urged upon your attention as a very important mode of *grouping* that is presented with considerable confidence. It is based upon an observation of nature's methods, as seen in the rotation of forest species in most woodlands, and also upon some of the favorite methods of European forestry. It may be thus stated :

"In planting your cheap trees, see that you have them set out in rows of the several kinds in this manner, beginning with cottonwood : Plant a belt of three rows ; next set two or three rows of water maple or willow, and so on with alternate belts across the block where you want oaks or hickories.

"When you have a crop of acorns, plant one in the inter-places, between the cottonwoods of the middle row of each belt. The acorns will soon vegetate and make deep roots. For several years they will make little or no tops, but *there they are*, and there they will stay until your cottonwoods are large enough to be useful, when they should be cut down and utilized. Cut in summer and peel, if used for fencing ; cut in winter, if used for fuel. Either leave the brush upon the surface, or remove it and give the ground a good stirring with the plow. The oaks will now start up rapidly, and in a few years the maples, no longer needed to shelter them, should be moved in the intermediate belt, and the oaks, in rows, twenty or twenty-four feet apart, may be allowed ultimately to occupy the ground. If this wide space be considered too great, you may set belts or two rows of maples or willows, alternating with the three rows of cottonwood.

"The hickories may be started and managed in the same way. The intervening belt of maples or willows left after the cottonwoods are cut away, will be of great service to the hard wood trees coming on between them, and will force them up straight and less branched."

Mr. Johnson, of Burlington, finds that the natural timber growth of forty years, commands as much money *to-day* as the combined produce of tillage lands adjoining has produced in all those years.

If you insist on planting the box-elder at all, let it be the belt or the rows in which to plant the nuts and acorns, as its premature destruction for fuel will not be regretted.

In building up a grove of black walnut, a similar plan may be adopted, with this modification : Plant the nuts at the same time as the "cheap trees," and let them occupy the *middle* row of the three rows, before planted with box-elder or cottonwood. In this case it will be necessary to be watchful lest the nurses overpower them, and you may be obliged to hack down the nurses, or most of them, before they have obtained useful sizes. For want of this watchfulness, some walnuts have suffered in mixed plantations in Nebraska, where, however, many more set in a single row on the lines between fields, and exposed on both sides, have been rendered almost useless as timber trees, though large and thrifty, as they grew wide and low-branched. Nature's trimming is the best and cheapest, and it *gets done*. Man's work is expensive, and is often neglected.

In few instances only the contrary can be shown, where some devotee to his trees has even succeeded in keeping them sufficiently pruned to produce fair logs of walnuts, standing in single row. The natural habit of the tree is to send out lateral branches, and to make a huge, round-headed, spreading top, beautiful in the landscape but unprofitable for the lumberman.

The white oak, burr oak, and our native oak of the prairie groves, which seems to be a variety of black oak, are the most valuable, perhaps, for grove culture. Our native black oak of our timber borders grows very rapidly. when it begins to run up and will attain size for poles, and even posts, grown very thickly. If dry when placed in the ground, it proves fully as durable as the two first named.

Gather the acorns in fall and keep in sand during the winter, where they will freeze. Plant early, and cover very lightly with earth, with a sprinkling of leaf-mould on top.

HARD MAPLE.

As a rule, it is best to gather small thrifty trees of this desirable lawn and avenue tree from the native timber, where they run up straight. They are not found difficult to transplant. When grown from seed, they are very slow in getting started upward. For fully three years they are low tufts, acting as though they never designed to make trees. They do not transplant easily on our light soils until they begin to shoot up. As a strict grove tree, we have, perhaps, many superior to it in all respects, yet the sugar maple groves planted twenty-five years ago, are now valuable for syrup and sugar-making.

As a tree for the lawn or roadside, there is none more symmetrical in growth and, though a slower grower when young, it makes a rapid growth as it attains age.

The seeds ripen in autumn, and they should be kept in moist sand until the time for sowing. The plants should be kept in seed-bed several years, and be well cultivated.

YELLOW AND BLACK BIRCH.

These trees thrive well in groves, or as ornamental trees in slightly sheltered positions. Gather the seed in fall, and mix with sand as advised for other seeds. Our native birch usually is full of catkins.

CHESTNUT.

This desirable tree is not hardy when young, unless it is cared for until it gets some depth of roots. It never does well when transplanted. Keep the chestnut in moist sand and plant early in spring in sheltered position where they can have good culture in the early part of the season. Cover the whole plant with prairie hay or straw the succeeding fall. When two years old mulch heavily in the fall well up the stems. After this, if the ground is not kept too clean the trees will usually stand the winters; but if mulched *every* fall until six years old, they will attain more growth, and bear fruit much sooner.

The following article, by Mr. Read, is very important for two reasons—it gives his experience with regard to the portions of the original forest still remaining in Ohio, and the method necessary to preserve them, which exactly coincides with my experience and observation with regard to those interspersed throughout the settled portion of Ontario. With regard to planting the willow, however, for protection of these forests, as here recommended, it must be remarked that objections are entertained, in some parts of the country, to the willow, which is believed by many to propagate insects. For a quick-growing tree, without this objection, it is probable that the silver poplar cannot be surpassed. Neither again should this be used when the land near by is to be ploughed, as it will certainly sucker. Probably the Norway maple would be, for such a purpose, our best tree. It grows with extreme rapidity, and its habit, when properly treated, of branching close to the ground, would render it exactly what is wanted to replace the protection formerly afforded by the destroyed undergrowth. But, as stated by many of our correspondents in another part of this work, when it is desired to preserve a forest, if it have not been allowed to become so overgrown with grass that the seeds cannot take root, the careful exclusion of cattle will allow the necessary undergrowth, the chief preservative of a forest, to grow. Through such a forest, it might be remarked, the seeds of the Norway maple might be scattered broadcast at the proper season, which would result in an undergrowth of very rapid progress. It will be seen that Mr. Read favors the retention of tap roots. This is a disputed question, with many on either side, and one which needs actual experiment.

HINTS FROM NATURE ON FOREST CULTURE.

By M. C. Read, Hudson, Ohio.

The successful culture of forests requires a careful study of the mode of growth of each tree, the character of the soil best fitted for its growth, and of all the conditions tending to secure the best and most permanent results. Nature is her own best teacher, and the more carefully we follow her teachings the better will be our success. Departure from them in any important matter will tend to failure.

If the acres in Ohio, reported as covered with forests, were real forests, and could be preserved, they would probably suffice for the best agricultural results in the State. The preservation of these forests is now of first importance, and all influences which threaten their destruction should be carefully studied.

Instances are not wanting where efforts to make these forests more valuable are hastening their destruction. Some years ago the large elms which abounded in many of them were considered of no value for wood or timber, and were cut down and burned for the potash they would yield. The suggestion thus offered, of the supposed advantage of cutting out the valueless trees, was in some instances followed, by cutting out all the shrubs and poorer varieties of trees, for the purpose of favouring the growth of the more valuable ones. The result was, that the forests were opened up to the influence of the surface winds which swept the fallen leaves into the ravines and bottoms, the native grasses steadily encroached upon the forest, preventing the growth of seedling trees, forming a thick carpet of turf, almost impervious to water, while the destruction of the mosses and the removal of the leaves permitted the ground to become deeply frozen in winter, so that the influence of the forest in absorbing and retaining the rainfall was greatly impaired. The trees upon the margin gradually died out, or were overturned by the winds, until the early and complete destruction of the forest became apparent. The axe was then employed to finish the work, the sickly residue of the forest was destroyed, and the land devoted to pasturage or the plow.

A natural forest has a thick undergrowth of shrubs, mosses and herbaceous plants, which hold the fallen leaves in place, favour the absorption of moisture, keep the ground from freezing, prevent the access of winds, and secure that constant humid condition favorable to forest growth. The preservation of our forests requires that all these conditions be preserved as perfectly as possible, and the untoward influences of the adjacent deforested lands be in some way counteracted. Left to the influences of natural agencies, most of our small patches of forest will die out on the margins ; the grass will intrude upon them, preventing the growth of seedlings ; the wind will drive the leaves toward the interior, tear down the large trees, and slowly eat away the whole forest. Here is a fitting place for that useless hedge plant, the yellow willow. It will grow readily under the shade of other trees, and planted as a fence around these patches of forest, it will make a complete windbreak, and counteract the effect of the deforesting of the adjacent land. Such protection, and the complete exclusion of domestic animals, will save these forests from destruction. It is doubtful whether they can be saved in any other manner. Where seedlings of the desired varieties do not spring up in sufficient numbers, seeds should be planted so as to keep the surface well stocked.

This work of the preservation and perpetuation of what we now have is so important in this State, as to justly claim our chief attention. On the few farms where the timbered lands are too small, they should, if possible, be made the nucleus of the new forest, and the hedge or wind-break of willows be so located as to include within its boundaries the whole of the area devoted to forest trees.

In the new planting, an effort should be made to secure as quickly as possible the conditions under which nature secures a healthy forest growth. This can be largely secured by the thick planting of a large variety of trees. Thick planting will soon secure the requisite shading of the ground, and will resist the action of the winds. If a plantation is made of one species only, the insect enemies of that tree will probably be so increased by this artificial increase of their appropriate food as to make them formidable enemies, which will not ordinarily be the case with a mixed plantation. In the latter case, as some will be surface, and others deep feeders, a thicker growth can be maintained without injurious interference.

But there is an error which should be carefully avoided. Most men, in planting orchards, demand trees of large size, and to meet this demand, and at the same time furnish trees that will easily bear transplanting, they have resorted to severe root-pruning and frequent transplanting to force a mass of fibrous roots. Most of our fruit trees are naturally deep feeders, pushing their roots far down into the sub-soil for moisture and mineral food. A seedling apple tree of one year's growth has a long tap-root, generally larger and longer than the growth above ground. If left to grow undisturbed, until of such a size as the fruit-grower demands, it could be transplanted with only great difficulty, and with such a mutilation of its roots as would hazard its life. The nurseryman, therefore, plucks it up after one summer's growth, cuts this tap-root into several sections, making each a stock for a graft; these planted in rich, mellow soil, throw out a mass of fibrous roots, and soon become what are called strictly first-class plants. But they are essentially unnatural products, and the weak constitutions and short lives of our fruit trees may be easily accounted for by this practice. In so important a matter as determining that some trees shall push their roots along the surface of the ground, feeding upon the rich humus exposed to atmospheric influence, and forming a broad base of interlocking roots, upon which the tree may stand, while others push their roots directly downward into the stiff, hard sub-soil, and anchoring themselves there by long tap-roots, nature makes no mistakes. It is for a purpose that these long tap-roots push themselves downwards; and that purpose is the health and vigor and long life of the tree. We fight against nature when we interfere with this tendency. The destruction of the tap-root of a hickory tree is almost as fatal as would be the destruction of all of the lateral roots of an ash. Each has its own mode of growth, and cannot be grown after the model of the other.

Most of our nut-bearing trees have this deep-rooted mode of growth. They cannot be grown in nurseries until three or four years old, and then transplanted, without such a mutilation of their roots as will greatly impair their value. If it is not convenient to plant the nuts in the places the trees are to permanently occupy, one year is as long as they should remain in the nursery. Each will then have a long tap-root and almost no lateral fibrous roots. It can be taken up with ease without any mutilation, and as easily replanted in the place it is to occupy. It will then have a natural growth, will get its food in the way nature intended it should, and, if the soil is a congenial one, will maintain a healthy and vigorous growth until it attains the stature of a perfect tree after its kind.

The mode of growth of the seedlings of all the trees we propose to plant should be carefully studied, and these deep feeders never deprived of the instruments or members by which they seek their food. All surface feeders may be safely grown in nurseries until of good size and subjected to almost any degree of root-pruning, and, when planted out, will make a healthy growth. But if those with tap-roots are thus treated they will be comparatively worthless. If retained in the nursery, and root-pruned until the power of renewing the tap-root is lost, they will none of them make healthy, long-lived trees. If so small when transplanted that they are able to renew the tap-roots, their growth will be so checked that seedlings of one year's growth will, in a few years, surpass them in growth, and become more valuable trees.

The following statement of Mr. Foster's experience and method will be found valuable, while the article following gives an excellent and rapid method of transplanting forest tree seedlings. It should always be remembered that one of the European rules in planting is not to confine a grove to any one species. It has repeatedly been found that groves and forests planted of one kind of tree commence to decay, and that this decay was even at that late period averted by the planting of numerous trees of a different species among the original ones:

FOREST WOODLANDS,

BY HON. SUEL FOSTER, MUSCATINE.

The subject of the influence of trees in rain-fall deserves the attention of farmers Every farm should be divided into suitable lots of five to forty acres, making divisions on the highest land for planting timber-belts. The strong, sweeping winds drive the dust from the soil, especially from the hills and ridges, and dry the moisture ; and this exhaustion of water from the soil is evidently very great. Forests keep the water from running off, and prevent the sun and wind from drying the ground.

The farmer can thus readily see how he can benefit his farm by planting wind-breaks, while, if his tree-planting induces rain, the moist wind will be likely to pass it on to the adjacent or remote country beyond the reach of his patriotism. Besides the drying effect of the wind, we find the blowing of the crops about, and sometimes laying them flat, a great damage to the crop.

WHAT TREES TO GROW.

No farm is complete without a wood-lot, and it is easier to raise one than to clear off one covered with the usual natural growth. When one plants his own timber he can have such as he wants. White ash is best for farm tools ; black cherry for cabinet-work. It will grow as fast as black walnut. The walnut roots, too, are poisonous to the crops and orchard trees for some distance.

Set some evergreens about the premises. They make the best wind-break. Set them on the north of the orchard and the buildings. Plant deciduous and fruit trees as early in spring as the ground can be ploughed, and evergreens a little later. Some people do not have any luck setting evergreens ; it is because they do not know how. Handle them carefully. If the ground is dry use plenty of water. Keep the roots from drying from the time they are taken from the nursery till they are planted out. Plenty of wet straw or rags of gunny-sacks about the roots will keep them moist in going from nursery to the place where they are to be planted. Make a mud-hole and dip the roots in before setting. Dig the hole large enough to lay the roots out in their natural positions ; fill in the earth and poke it carefully underneath all the roots. When the roots are all covered and the hole half filled with soil, dash in water enough to thoroughly settle the dirt about the roots. If it is dry, fill in more dry dirt and tramp it hard that it may be firmly pressed on every part of the roots, for the roots must have the privilege of absorbing water, and every part of the bark of the roots will absorb where the moist earth comes in contact with it.

After the trees are set, mulch or cover the surface with any sort of litter, leaving earth on them to prevent blowing away. If drought comes in summer, water ; but do not slop a little water on top of the ground ; it is the roots of the tree that need the water ; dig the earth away until you get near the roots, then pour in water enough to wet the ground thoroughly a foot distant around and beneath the roots, then fill in the earth and cover with mulch, and it will last a long time, and usually save the life of the tree and contribute greatly towards its growth.

A few notes on the relative growth of well known species on my grounds may be useful. They are the results of actual measurement with line and pole, on March 16th, 1879 :

Black cherry, transplanted from woods, 20 years' growth, height 40 feet, diameter 11 inches.

Sugar maple, transplanted from woods, 20 years' growth, height 20 feet, diameter 14½ inches.

Soft maple, transplanted, 20 years' growth, height 35 feet, diameter 16 inches.

Chestnut, from seed, 24 years' growth, height 30 to 39 feet, diameter 10 to 16½ inches.

White pine, 2 year seedlings, growth 24 years, height 50 feet, diameter 19 inches.

Norway spruce, 4 year seedlings, growth 20 years, height 34 feet, diameter 13 inches.

European larch, 1 year seedlings, growth 10 years, height 20 to 30 feet, diameter 4 to $7\frac{1}{2}$ inches.

Scotch pine, 2 year seedlings, growth 20 years, height 30 feet, diameter 16 inches.

Austrian pine grows much like the Scotch, but more stocky, not quite as tall, is deeper green in colour and a more beautiful tree.

The sugar maple is a slow growing tree from seed, until it is about five years old, when it begins to make top. In the hard, grass ground by the roadside, it grows, when started, nearly as fast as the soft maple.

The black cherry grows nearly as fast as the walnut, and it is more valuable for cabinet work.

I think the white pine the best of the evergreens for timber plantations.

The Norway Spruce is a handsome tree for planting near the house.

Do not try too many species, *but be sure to set out trees and set the best.*

Best Mode of Transplanting Forest Tree Seedlings.

I have almost uniformly advised the planting of forest tree seeds where they are to stand permanently. But this is not always practicable, or indeed advisable. In transplanting, the plan of inserting the plants into a cavity formed by thrusting a narrow spade in the ground and pressing the handle forward, has been generally practised. But careful growers of forestry belts and hedges find that it pays bountifully to do the work more systematically. In reality, the best and surest method takes little, if any, more time and labour than the less perfect and successful mode of setting behind a spade.

Plow straight furrows four feet apart across the plot, running the plow as deep as possible. When ready to put in the plants, keep the team at hand, and deepen two or three furrows at a time, so the earth will be fresh and moist, by plowing back in each furrow with an active boy pressing down on the plow beam. This gives a deep furrow with mellow dirt thrown up on both sides. In setting the plants, two hands work to the best advantage. Stretch a line over the centre of the furrow, straighten the crooks in the furrow with a spade, and proceed to set the plants. One hand attends to wetting the roots of the plants, a bunch at a time, as taken from the convenient point where they are heeled in, and sets them upright at proper distance apart, pulling in the requisite loose dirt with his hands or feet. The other hand follows with a hoe, levelling up between the plants, and tramping the earth firmly around each plant.

Two hands in this way will soon put out several acres. After the plot is finished, cultivate with two-horse corn cultivator or double shovel, depending on the height of the plants. About the middle of June, plow the spaces between the rows, by throwing the furrows towards the trees. A plantation started in this way will usually make double the growth the first year made by those planted carelessly with a spade, and if the plants are in good order, not one in two hundred will fail to grow. If plants *barely live* the first season after planting, their growth will be feeble for several years, and they are liable to perish the succeeding winter.

KEEP A GROVE NEAR THE HOUSE.

How pleasant within easy walk of your house to have a woodland of five, of ten, or, still more pleasant, of fifteen acres. Let it not be a mossy wilderness of grassy land, and old and dying timber, but a well fenced territory, where infant, half-grown, and full-grown trees, uninjured and fresh, cover the ground, clear cut of frame, tender and glowing of foliage as the bowers where Melibœus walked or Thyrsis sung. Enter for fifty steps, the world is gone; a hundred, and the solitude is utter. Without, it is the hottest of midday suns ; but the great leaf-roof above fills every sylvan arch with cooling shade, and, passing where you will along these natural colonnades, you breathe great drafts of life-giving forest air redolent of pine and balsam. On all sides outer sound is shut from you, the distant city bells are all unheard, the nearer mill has but a watch's tick ; even the harsher noises of farming life approach the ear with muffled and not unpleasing touch.

Here is repose, for here is distraction from outer cares. Notice that the forest has a population of its own ; and if you have not been a destroying tyrant, but hospitable to the little harmless savages of the wilderness, a thousand lives will be around you, the existence of which you knew not of. In yonder hollow, now seen, now hidden, the partridge is feeding her half-grown brood ; the squirrel upon the leaning sapling beside you, glancing down with a half-friendly, half-careless air, is carving with his sharp curved teeth one of last year's nuts ; and in the insect life, on ground and fallen tree are bustling communities, colonies, monarchies, or empires, for what we know, crossing, meeting, working, assisting, as if everything hung on their efforts, you were nobody, and space were outside the fence.

Here is the home of retirement, the seat of contemplation, the birthplace of thought. He who has near him such a solitude, may rear heroes ; for the murmurings of the mighty trees roll laden with the whispers of ambition to the youthful ear ; he who has it may hope for statesmen among his sons, for the converse of such a wilderness has nurtured throughout successive ages, in many a succeeding race, in many a youthful and patriotic heart, the plans which in after days bore richest fruit of national life and national greatness.

Number of Trees required to plant an acre of land in squares, or in rows at right angles, and at equal distances apart both ways :

Feet between rows.	Number of Trees.	Feet between rows.	Number of Trees.	Feet between rows.	Number of trees.	Feet between rows.	Number of trees.
1.0	43,560	7.0	889	13.0	257	19.0	120
1.5	19,360	7.5	779	13.5	239	19.5	114
2.0	10,890	8.0	680	14.0	222	20.0	108
2.5	6,970	8.5	603	14.5	207	22.0	90
3.0	4,840	9.0	537	15.0	193	24.0	75
3.5	3,556	9.5	482	15.5	181	26.0	64
4.0	2,722	10.0	435	16.0	170	28.0	55
4.5	2,151	10.5	395	16.5	164	30.0	48
5.0	1.742	11.0	360	17.0	150	40.0	27
5.5	1,440	11.5	339	17.5	142	50.0	17
6.0	1,210	12.0	302	18.0	134	....	....
6.5	1,031	12.5	270	18.5	127	....	....

Common Names.	Recommended For	Gather In	Kind of Seeds.
Silver leaf maple, Soft maple	Shelter-belt, fuel, ornament	May, June	Broad side-wing.
Sugar maple, Black maple	Sugar, ornament, fuel	Sept., Oct	Medium side-wing.
Honey maple, Ash-leaf maple, Box-elder	Sugar, fuel, shelter, ornament	Oct. to March	Narrow side-wing.
Red maple, Soft maple	Shelter-belt, fuel, ornament	May, June	Small side-wing.
Sugar maple, Rock maple	Sugar, ornament	Sept., Oct	Medium side-wing.
Balsam fir	Shelter-belt, balsam, ornament	Oct., Nov	Nutlets in small cone.
Douglas spruce	Shelter-belt, ornament, manufacture	Oct., Nov	Nutlets in small cone.
White spruce	Shelter-belt, ornament, manufacture	Oct., Nov	Nutlets in larger cone.
Norway spruce	Shelter-belt, ornament, manufacture	Oct., Nov	Nutlets in a large cone.
Black spruce	Shelter-belt, ornament	Oct., Nov	Nutlets in a small cone.
Horse chestnut	Ornament, in south half State	September	Nuts in fleshy envelope.
Yellow birch	Manufacture, ornament, shelter-belt	Sept., Oct	Minute winged in catkins.
Black birch	Fuel, ornament	Sept., Oct	Minute winged in catkins.
Barberry (a shrub)	Hedge, ornament	Oct., March	Berries in racems.
Shell-bark hickory	Manufacture, fuel, ornament, fruit	Sept., Oct	Nut in valved shuck.
Bitter-nut hickory, Swamp hickory	Manufacture, fuel	Sept., Oct	Nut in valved shuck.
Black cherry	Manufacture, ornament	Aug., Sept	Cherries in racems.
Chestnut	Manufacture, ornament, fruit	Sept., Oct	Nuts in burr.
White cedar	Ornamental manufacture	Sept., Oct	Nutlet in very small cone.
White ash	Manufacture, fuel, ornament	Sept., Oct	Double winged seed.
Black ash	Manufacture, fuel, ornament	Sept., March	Double winged seed.
Honey locust	Hedge, manufacture, fuel, ornament	Sept., March	Hard bean in long pod.
Butternut, White walnut	Manufacture, fruit	Sept., Oct	Nut in shuck.
Walnut, Black walnut	Manufacture, fruit	Sept., Oct	Nut in shuck.
Red cedar	Shelter-belt, ornament	Sept., March	Berry-like cone.
Tyrolese larch, European larch	Manufacture, shelter-belt, ornament	Sept., Oct	Nutlet in small cone.
Tamarac, American larch	Manufacture, shelter-belt, ornament	Sept., Oct	Nutlet in smaller cone.
White pine	Manufacture, shelter-belt, ornament	Sept., Oct	Nutlets in long cone.
Scotch pine	Manufacture, shelter-belt, ornament	Sept., Oct	Nutlets in smaller cone.
Austrian pine	Manufacture, shelter-belt, ornament	Sept., Oct	Nutlets in smaller cone.
Lombardy poplar	Hedge, shelter-belt	No seed	
White poplar, Silver leaf poplar	Shelter-belt	June	Minute in cotton.
Sycamore	Manufacture, wet land	Oct., March	In a ball.
Red oak	Manufacture, ornament, fuel	Sept., Oct	Acorn.
Basswood	Shelter-belt, honey	Sept., Oct	Nutlet attached to bract.
White oak	Manufacture, ornament, fuel	Sept., Oct	Acorn.
White elm, Water elm	Manufacture, fuel, shelter-belt, ornament	May, June	Winged disk.
Slippery elm, Red elm	Manufacture, fuel, shelter-belt, ornament	May, June	Winged disk.
Rock elm	Manufacture, fuel, belts	May, June	Winged disk.

CANADIAN WOODS USED IN MANUFATURE.

The following statements from leading manufacturing firms of Ontario will give an excellent idea of the valuable purposes served by our Canadian woods. The frequent allusions made in these letters to the rapidly approaching or even the present scarcity of which the writers speak, may do something towards inducing those of our farmers who still possess some portions of woodland, to preserve it in forest rather than give it over to the rapid destruction of the axe, or the slower but in time equally destructive method of allowing free entrance to cattle. A passage in one of these letters is particularly suggestive, where one of the writers remarks, "that a farm covered with second growth hickory from six inches upwards, would be as valuable as some whole townships that are now struggling under crops."

The following is from a prominent agricultural implement manufacturing company in Toronto :—

We use annually about one million feet of the following kinds of lumber, all of which is used in the construction of reapers, mowers, self-binding harvesters and horse hay rakes :

White ash,	principally	from	the Counties of	Kent, Essex and Elgin.
Red oak,	"	"	"	Essex, Grey and Bruce.
Hickory,	"	"	"	Lambton, Kent and Essex.
Hard Maple,	"	"	"	Grey and Bruce, but
Rock Elm,	"	"	"	Some from all Counties west of Toronto.
Basswood,	"	"	"	" " "

Pine (for boxes, &c.) usually bought from city dealers, but presumed comes mostly from the northern counties.

We use some second growth hickory. Sizes preferred for this are butts six to nine inches in diameter. We cannot say anything as to age. We do not use any foreign woods, and could suggest none that is more suitable for our work than native timber.

Speaking of woods used for particular portions, where strength is needed as for frames binders, etc., we use ash or maple ; spokes, hickory or oak ; for large broad ones, white ash ; for parts of binders, etc., where lightness and no great strength is needed, basswood and pine ; horse-rake axles, maple ; posts, ash ; double-trees and whiffletrees, hickory ; tongues and neck-yokes, white ash ; felloes, generally rock elm.

From a steam-bending factory at Norwood :—

We use in our business here about 3,000 logs of rock elm, and 1,000 logs white and black oak, yearly, size from nine to twenty-four inches ; we also use second growth elm for buggie and carriage hubs, about 18,000 feet per year, ranging in size from four to ten inches ; also about 500 logs of water elem, average size eighteen inches.

Rock elm we use for cutter-runners, binders and shafts ; oak for sleigh runners and waggon hubs ; second growth elm for carriage and buggy hubs ; water or soft elm for cutter reaves, arm pieces and toboggans.

The following is from an extensive planing mill in Toronto :—

We obtain timber from :—Pine, from the north shore of Lake Huron ; white oak, from Amherstburg ; red oak, from Oro, Tiny, Tay and Vespra ; butternut, a little from Western Ontario ; cherry, from Grey and Bruce ; white ash, from the same section on the C. S. R. R., as white oak ; black ash, from almost all points excepting Muskoka, especially where best red oak is to be got : cedar, best from Northern R. R. ; hemlock, large quantities from vicinity of Barrie ; birch, largest quantities come from the same points as the cherry ; soft elm, chiefly obtainable from same sections as the cedar ; rock elm, from sections where birch is obtainable ; red cedar, from Florida ; not cut in Canada, but can be procured on Georgian Bay Islands. We use white oak for door-sills, chancels, pews, pulpits, in fact, all ornamental church work. It would be of much more general use but for its scarcity. Much that has come lately into market as white oak, is but a kind of grey of inferior quality. White and black ash, and chestnut, for wainscotting, architraves and general internal finishing of first-class houses. Cedar, great quantities used as scantling, where there is danger of rotting, and for lining of wardrobes. Red oak, church and other doors. Cherry, walnut and butternut, largely used in bank and office fittings, also in finely finished houses for doors, blinds, wainscotting, etc. Birch is superseding cherry for bannisters, newels, rails and office fixtures.

The next is from a large agricultural implement firm at Oshawa :—

In our business we use white pine, some basswood, maple, oak, ash, and rock elm.

So far they have all been of Canadian growth ; cannot say whether any of them are second growth or not. We do not use any timber of foreign growth, but buy, exclusively, Canadian timber.

From a similar firm in Brampton :—

The kind of woods we use is all of Canadian growth, white pine, which of late years, we have procured from the north, from Georgian Bay east to Midland ; white oak and red oak from the County of Peel west to Windsor ; white ash and hickory in the same territory ; basswood and rock elm from the County of Peel north, mostly of original growth. The kind of work the above timber is used for is the manufacture of agricultural implements, viz. : threshing machines, reapers, mowers, hay rakes, straw cutters, etc. The size of timber generally used for these purposes will range from one to three feet in diameter. I omitted to mention hard maple, which we procure from all points of the compass. We also use some black birch, which we get from the northern part of Ontario, from the County of Peel to Georgian Bay. I may say we use no foreign woods.

From another of the same class at Patterson, Ont. :—

We beg to say that white and yellow oak, white ash, hard maple, rock elm, basswood, and pine are the principal varieties. These are natives and are getting scarce in this vicinity. We now find it necessary to reach out to those sections of the Province traversed by the Canada Southern Grand Trunk, Hamilton and North-western and Northern railways for our supplies.

Wood taken from medium-sized trees preferred. Second growth is difficult to get. In ash it commands a high price.

All kinds of hard wood are becoming scarce, and in a few years, at the present rate of consumption, will have to be obtained from without the Province. In fact we are even now trying to substitute wrought iron and steel in many parts of our machines, for wood.

From a well-known carriage works firm at Gananoque :—

It is with great difficulty we get such timber as we require. We use a quantity of oak, hickory—(second growth ; when we can get it, should use nothing but second growth), ash—(second growth);—basswood and whitewood. Our basswood we get locally, also oak, but hickory is from Ohio, and some from western Canada. Whitewood from the States ; ash, some local and some from the west. The second growth hickory could be grown profitably, I think, in this country. Can be used from trees from 6 inch diameter. It is worth about $100 per thousand in the plank. A farm covered with second growth hickory from 6 inches up would be as valuable as some whole townships that are now struggling under crops.

From a leading car company at London :—

In ordinary car building the principal woods used are oak, ash, chestnut, walnut, whitewood, Southern pine, Norway or red pine and white pine, but in the fine coaches mahogany and other fancy woods are now being used. Oak, both white and red, are Canadian timber ; grows in all parts of Ontario. I think the bulk of growing oak at the present time is in the County of Essex and adjoining counties. Ash, both white and black, more or less all through Ontario; walnut, very little good left, grows chiefly in the counties bordering Lake Erie, but is now imported from Indiana. Whitewood very scarce now and is imported chiefly from the United States. Norway or red pine grows chiefly in northern Ontario; great quantities having been cut in the neighbourhood of Stayner, Angus, Elmvale, and other places. White pine grows in the Georgian Bay district, the Ottawa district and Muskoka, Canada is almost clear of walnut, and nothing would pay farmers better than growing walnut trees.

As regards the general use of woods in car building, white oak in box cars is used as sills and stringers, that is the two outsides, and two centre pieces, are oak, and two intermediates are red or Norway pine, forming the foundation, or bottom of the car lengthwise. Oak is also used in the framework of car bodies, as studs, braces and rafters, or top frame of car. The woodwork of car trucks is made of oak. White ash is used principally in passenger and street cars. It is used in making doors, rafters and some of the lighter work of the car. Whitewood is used chiefly in passenger and street cars as outside panels and some of the lighter furnishings. Bird's-eye maple and walnut are used as inside panels, mouldings, and inside finishings generally. Southern pine is used as longitudinals in passenger cars, taking the place of oak. The body of box cars is covered (or sheeted) with the best quality of white pine; the flooring is composed generally of Norway pine. The floorings of passenger cars are generally made of oak or Southern pine. Everything in car building has to be well finished, closely and firmly put together. I may say that cherry, chestnut, and butternut are sometimes used in cars, taking the place of walnut, as they are not so expensive, and will give a good appearance to the inside of a car.

The following is from a leading carriage factory in Toronto. It is especially valuable as shewing the sizes of wood required, and the time of cutting it:

Forest ash is the wood generally used in the construction of carriage bodies, and should be cut in planks varying in thickness from one and a quarter to five inches; that is to say, $1\frac{1}{4}$, $1\frac{1}{2}$, 2 in. $2\frac{1}{4}$, $2\frac{1}{2}$, 3 in. $3\frac{1}{2}$, 4 in. $4\frac{1}{2}$ 5 inch. Very little of the last mentioned size is used. For carriage gears and poles a second growth or a first-class quality of white ash is used, and is required in planks $1\frac{1}{2}$, 2, $2\frac{1}{2}$ and 3 inches thick. Second growth and forest hickory are also used in parts of carriages and waggons. This lumber is found most convenient when cut $1\frac{1}{4}$, $1\frac{1}{2}$ and 2 in. Forest hickory is sometimes required as large as $2\frac{1}{4}$ and $2\frac{1}{2}$ inches thick. Oak and rock elm are used in buggy and waggon shops. Oak is seldom called for less in thickness than two inches, and is very often required four inches thick. Elm 1, $1\frac{1}{4}$, $2\frac{1}{2}$ and 2 inches. All the above mentioned timbers should not be cut down earlier in the fall than the first of November, and not later than the latter part of January. The logs should be taken to a mill and cut up as early as possible after the trees are cut down.

Basswood and whitewood are the woods generally used for carriage body panels. The former should be cut in boards half and one inch thick; the latter is required in thickness from half inch up to three inches; half, one inch, two and three inches. It does not make much difference what season of the year the trees are cut down, but basswood especially should not be allowed to lie in the log longer than can be possibly avoided before being cut up into lumber.

From a well-known carriage builder in Markham Township:—

Of the kinds of timber used in our line of business, first is the white oak, which is of original growth here, and is used for waggons, and cut from ten inches to two and three feet in diameter. Markham was once noted for good white oak, but it is getting culled out. There is quite a lot of red oak, but it is not so good for our purpose as white. It is porous and open grained, rotting soon. Next is second growth white ash. It is native here, makes good waggon tongues, is used in carriage building, and is cut from ten to twenty inches in diameter. Next is black ash. It is inferior to the white ash and is used chiefly in bodies for buggies and light work. It is cut here from twelve inches to two feet in diameter, and not worth so much per thousand feet as white ash is. Next is rock elm, which is a very useful wood with us here, being very tough. It answers well in waggon and carriage work. Next is hard maple, which is used chiefly in waggon axles. It is a very stiff wood, does not spring like hickory or ash, and is cut from eighteen inches to two feet in diameter. Next is basswood, a wood that grows here and is used in bodies for buggies and in waggon boxes. It is a very light wood, is cut from twelve inches to two feet in diameter, and is also used for flooring and sheeting in houses. Next in value in our trade is shell bark hickory. This wood we have to import. It is a very tough wood, is very valuable in our business, and is used in rims and shafts for buggies, light poles, etc. Next is birch and ironwood, which are used to some extent, but not so much as those mentioned above. In conclusion I might say all of the kinds of woods mentioned in this letter grow here in Markham township except the hickory, and I believe hickory would grow here as well as any other wood. I have twelve hard maples set out. They are growing splendidly. Not one died though it was prophesied they would, as people said they ought to have been soft maple. If the Government can throw out any inducement to get the farming community to plant out trees for future use, it would be a great boon to the country and community at large, as woods are getting scarce and dearer; so the sooner they commence planting out the better for all.

With the increasing wants of civilization, new uses for timber are being continually discovered. A few years ago elevators were as rare as they are now common. The following is from an elevator manufacturer in Toronto:—

I use pine for framework and the ordinary sheeting in of the hoistways. The frame timber is better when cut from logs of sufficient size to allow of say eight by eight inch timbers being cut without the heart.

For the runners or slides I use black birch; that cut from large trees suits best for this purpose. White ash, oak, rock elm, and maple for the frame work of cars and platforms. Second growth suits better for this purpose. For panelling I use maple, black walnut, cherry, butternut, chestnut, birch, white and black ash, white and red oak, and sometimes pine. Either growth will do for this work. All these woods, excepting black walnut, are common to all sections of these Provinces. The black walnut grows in Western Ontario.

The growth of the manufacture in all the branches of wooden wares has increased the value of all hard timbers, so that instead of cutting it to waste, owners of land will find it to their profit to take care of their timber.

Cherry and birch are becoming valuable timbers and will be, of all the Canadian woods, the most likely to take the place of the foreign.

From an Orillia barrel factory:—

I may state that I use oak, elm, ash, and basswood in my business, which is that of preparing material for both slack and tight barrel work, principally flour barrels, The timber is original. Any size of trees from six inches to sixty inches are used. Second growth timber would not do, as it is too tough.

From a match factory firm at Buckingham:—

The wood used in our business, matches, is pine, and the very best at that. My stock I obtain in this section of the country, Ottawa. Much that I use is the buttings from three inch deal, the piece that is cut from the deal to bring it to length. When the supply of that kind of stock is not sufficient I use the deal. Of course you know that deal is cut from the best and largest logs. Lumber that I use for my cases is largely spruce, as that is cheaper and I think makes a tougher case, although sometimes I use pine.

From a grain cradle factory at Mount Forest:—

I get my supply in this neighborhood, but find it getting scarce and require to go some distance now to get the required quality. The timber I use for snaiths is elm. I prefer white ash, but it is not to be had in this vicinity, only in very small quantities. For fingers I use maple, natural crook. That also is getting very difficult to get. The size of elm trees should be from six to fifteen inches in diameter; maple any size. I might say all kinds of merchantable timber, such as pine, rock elm, cherry, and basswood are scarce.

Of maple and hemlock there is a fair supply in this neighborhood, that is within a radius of about six miles. Of course, in the immediate neighborhood, there is little or no timber to be bought, the farmers requiring all they have for their own use.

From the veneer factory at Harriston :—

We use mostly soft and rock elm, also birch, which after cutting into proper lengths and steaming, we cut up into veneering and barrel staves and cheese box material. We also use basswood for manufacturing into barrel heading and tops and bottoms of cheese boxes. All the timber used in the factory is grown in this township (Minto), of which there is still a good supply. It is of original growth and mostly large timber, from twenty-two inches up to four and five feet in diameter, the soft elm especially attaining good size. We use no foreign timber of any kind.

From a prominent piano manufacturing firm in Guelph :—

We give herein a list and description of the wood used by us in our business, as piano manufacturers. Black ash of the largest size and best quality, used for tops and rims of pianos, to be veneered with rosewood. Basswood and whitewood of the largest size, and best quality, carved into legs and lyres for pianos. Pine of the best and softest quality, (white), for keys, and also for bottoms and blocks used in building cases. We also use cherry for upright piano cases, and small parts of all pianos, this of the best quality. The foreign wood used is spruce, (American), for sounding boards, and rosewood veneer. We have found our Canadian spruce too hard and gummy in its nature to answer our purpose. It does not give to the piano that sound which the American wood does, and is much more difficult to work. You see all the wood we use requires to be of the largest size and best quality ; soft grain, not liable to warp or twist, and easily worked. Cherry veneer could be used, but there are no mills in Canada that can cut veneer ; we get cherry veneer from New York, yet most of our best Canadian cherry lumber goes into the American market.

The following is from a leading furniture factory in Toronto :—

Concerning the kinds of Canadian wood we use in the manufacture of furniture in our business, I will class them according to their respective value. First, black walnut, which is principally used in the better class of furniture, grows in the western part of Canada, especially in the counties of Essex, Kent, Elgin, Norfolk, Lambton and Middlesex. In all these sections the walnut has become nearly exhausted, and if there is not an effort made in planting this valuable wood, it will not take many years to become extinct for commercial purposes. The price we pay for first-class walnut is from $80 to $100 per thousand. Cherry is another wood that is used for the better class of furniture. It grows generally all over Ontario, more or less, and is becoming very scarce, owing to the demand for it in the United States, where most of it has gone. Its market value is from $40 to $50 per thousand. Oak is used by us, but not very extensively, it not being always very suitable for furniture. Value about $30. White pine is much required in our business, but it needs no comment from me, as no doubt you are well acquainted with that class. Hard maple, or sugar maple as it is sometimes called, grows extensively throughout the whole of Canada. From it we make our inferior class of furniture, such as chairs, bedsteads, etc. Value about $16. Rock and soft elm are getting to be very much used for a certain class of furniture, because it is so easily worked. It is cheap and abundant. Price, about $12 to $14 per thousand. Soft maple and whitewood are woods that we handle a large quantity of, especially the maple. These grow luxuriantly in the western part of Ontario, and are always found abundant where there is walnut. Their price per thousand is from $16 to $18. Butternut is also used in cabinet-making. It grows generally all over the Province, is not very abundant, and is getting scarce. Price, from $25 to $30 per thousand. White and black ash are valuable woods for our business, and very much used. They grow generally all over the Province in large quantities, especially the black ash, which has a very beautiful grain. Its price ranges from $18 to $25 per thousand. Basswood also is in much use in our manufactory, and is from $14 to $16 per thousand. Original growth and old trees we prefer for our business, as they are better adapted and easier worked. Second growth is better for bending purposes. Of it we use a little, but it is more adapted for waggon and carriage making.

Some further details of the uses of woods in furniture, may be interesting. For instance, chair and table legs are made of maple or birch, those of the better class of tables, of walnut ; the curved portions of chairs, such as arms and backs, of rock and soft elm. Seats formerly made of basswood are now water elm, except those of rocking-chairs, which are still basswood. All visible portions of first-class tables are generally made of one wood, such as walnut or cherry. The inside machinery of extension tables, as of other furniture, where great strength and freedom of movement is required, is of white ash. Swamp elm is largely used for the tops and sides of tables, the legs being generally maple. Wash-stands, visible portions, of soft elm, concealed ones of pine or basswood. In bedsteads displaying the large smooth boards which are now fashionable, walnut, ash, red oak, and water elm are used, the upright portions being often maple, ash or walnut. Sideboards and wardrobes are made of cherry, red oak, water elm or walnut. Some of these woods are used for such purposes, veneered with more showy ones, frequently of foreign importation. In common chairs, cheap tables and bedsteads, the woods generally used are basswood, whitewood and water elm.

The next is from a similar firm in Belleville :—

The descriptions of Canadian woods used in my business, are black ash, black birch, cherry, soft and hard maple (beech is also used for chair work), grey or swamp elm ; this last, of late, is coming into extensive use, and has a beautiful grain, and makes a fine cheerful finish. The objection which formerly prevailed against elm was the difficulty of drying it to keep straight, which is now entirely overcome. Basswood is largely used ; our black walnut nearly all comes from Indiana. All the other kinds named are native woods, and except some basswood and some ash, are all of original growth, in fact the two latter, in my mind, are the only ones which would reach a size fit for use in less than about seventy years. From casual observation, basswood will grow to a diameter of from ten to thirteen inches in from seventeen to twenty-five years in favourable ground. Soft maple is very useful, but comparatively scarce. Birch is next in value to cherry, which is next in price to black walnut. Cherry is not abundant in this section, but birch is found in abundance just north of us, and is yearly increasing in demand.

Though scant of space I am persuaded to give my readers the following well written little essay by Mr. J. B. Smith, a gentleman connected with one of our principal Toronto lumber firms. It is a mass of valuable information, and comes from a thoroughly practical man :

The reckless waste of woods which has been going on for years, must eventually find an end in the total destruction of the timber with which this Canada of ours was once so bountifully endowed. The losses incidental to the getting out of logs have been partially estimated, but the consequential damages, such as the changes in the climate, water supply and others, cannot be computed. Let any Canadian of middle age recall the appearance presented by the forest in the days of his youth, and compare that with the present. He will remember the immense monarchs of the forest that stood towering in their rugged strength. "The Monarch Oak, the patriarch of trees ;" the wide spreading beech, the ash, Venus of the forest, with the feathery lightness of its foliage ; the noble elm, the butternut, hickory, and the birch, with others, many of which have disappeared. And what will our Canadian now see? No well guarded young trees replacing those which fell before the unrelenting woodman's axe, but dwarfed specimens of unhealthy progeny, or the fast decaying stump, a memento of departed greatness. Our duty is clear, not to mourn over the past wanton waste, but to be up and doing, providing for the reproduction of woods each year becoming more scarce. Reproducing is our sole recourse. This cannot be too strongly urged upon our farmers. We know what description of timber grew in certain localities, why not replant? In some counties walnut, whitewood, white ash, etc., were to be had in abundance. Now few of these trees are to be found. Necessary information can be obtained and furnished to all wishing to engage in arboriculture. Few of the trees of our forests but have been manufactured into lumber and placed on the market. They are all used in the many industries—ash (white and black), birch, beech, basswood, butternut, balm of Gilead, cherry, cedar, chestnut, rock and soft elm, hickory, hemlock, hard and soft maple, red and white oak, pine, tamarac, spruce, sycamore, walnut and whitewood.

In agricultural implements, including waggons, are used white ash, oak, maple and rock elm.

Buildings—pine, hemlock, maple, oak, black ash, elm, birch, butternut, cherry and chestnut.

Boats—pine, oak, spruce, tamarac and cedar.

For cabinet work—birch, soft elm, maple, cherry, walnut, butternut, oak, black ash, basswood, etc.

Car building—oak, pine, cherry, birch, maple, tamarac, walnut and whitewood.

Pianos and organs—walnut, whitewood, basswood, pine, chestnut, cherry, oak.

Tool handles—birch, maple, etc.

And a host of minor industries all contribute to consume the products of our forests. We are not content with our native woods, but go to far off climes for lignum vitæ, boxwood, mahogany, rosewood, baywood, tulip wood, holly, etc. These we cannot produce. The average diameter of trees manufactured into lumber is from 18 to 24 inches; this includes all the above mentioned kinds. These are, in the close grained woods, mostly the original; of a few they cut up the second growth.

The different species I have enumerated are to be found pretty evenly distributed. Walnut, whitewood, ash, maple, hard and soft elm, oak, balm, hickory, chestnut, sycamore, pine, basswood, cherry, are to be had in greater or less quantities in the south-western counties. For birch, rock elm, beech, maple, basswood, poplar, pine, hemlock, tamarac, we go to the northern and north-western, as well as the eastern counties. Black ash is at present a plentiful wood and can be obtained in almost any part of the Province. Soft elm is abundant, but even with our present plentiful supply, it will not long stand the demands made by American dealers, who, taking none but the largest and choicest trees, use quantities of this and other timber in manufacturing staves. Each year sees a diminished quantity of hemlock. Our supply of bark for tanning will soon be exhausted. Cherry is very scarce; what we have is a poor quality. The demand for this wood during the past year has almost exhausted our supply, In the process of ebonizing, so much in vogue, great quantities of cherry are used. White ash, butternut, and white oak, are also becoming woods of the past. Of walnut very little is to be had, and that is cut from partially rotten logs, which, when it was more plentiful, were cut, and, not being considered sufficiently good, allowed to decay. We rioted in the abundance of our forest wealth and are now suffering somewhat of the evils attendant on such a course. To-day we import whitewood and walnut from places to which formerly we exported large quantities of the same timber, much superior to what they are now bringing in.

We find the difficulty of getting a good quality of white oak, white ash and cherry increasing each year.

We are certainly opening up and clearing the country, but at a terrible cost.

In fine, unless we at once begin to reproduce, the limit of our forest wealth will soon be reached. It is not inexhaustible. Fires, cattle, and men, not lumbermen alone, but campers, hunters, etc., seem combined to destroy the remnant of what seemed an endless supply, as well as to prevent the growth of young timber.

As to the prices of Canadian woods, it is difficult to give you, as prices differ so much, they being regulated principally by the general run of the stock under negotiation, and the average quality of stock in different parts of the Province are not at all alike. However, I will give you the prices we would pay for the different kinds, loaded on cars at point of shipment, per thousand feet: cherry, \$35 to \$40; butternut, \$30 to \$35; chestnut, \$19 to \$21; white oak and white ash, \$18 to \$20; red oak and black ash, \$12 to \$14; soft elm, \$8 to \$9; rock elm, \$10 to \$11; whitewood, \$19 to \$20; basswood, \$11 to \$12; sycamore, \$12 to \$13.

Above prices are for first and second quality, together to average not less than fifty per cent. of first. Cull cherry and butternut is worth about \$14. Culls in the other woods would be worth about one-half the above prices. Pine is generally bought mill run, with mill culls out, and is worth from $10 to $14, according to the percentage of clear lumber in the stock. Mill culls are worth $5 per thousand feet. Hemlock bill-stuff is worth (up to sixteen feet long) $7, and an advance of fifty cents per thousand for every two feet over that length up to say twenty-two feet; over that length it is worth considerable more.

Desirable Trees to Plant.

It was the original intention to give here a full chapter on the best method of planting with a view to appearance, but want of space forbids. A few suggestions may be, however, given. We should consider to what trees our soil and climate is adapted. A tree of any variety, flourishing well, and throwing out branch and leaf in their season with strong and hardy life, looks better than another, however high its name in the catalogue, which struggling only keeps existence, and never arrives at the fulness it attains elsewhere. Then, another point, wonderfully neglected in setting out trees, is colour. If you look abroad throughout the wonderful variety which nature offers here, you will see foliage of a pure cream colour—of bright silver hue—of an infinite number of greens—of bright gold—of delicate brown—of rich crimson, and many more. We should notice what they are at the four seasons; we should also remember the height of the trees; that some can shew well above those adjacent; and that some colours are ever most beautiful when set off by certain others. It is not as if our climate were unpropitious; on the contrary, trees of endless variety of form—of infinite charms of colour—flourish luxuriantly here. And we shall find that if we take advantage of the variety, and plant with a remembrance of the effect one tree has near another, that we shall soon have charming pictures; and shall also have supplied a background of foliage which, seen from another point, will itself form a picture equally charming. Our trees—whether plantation, wind-break, or clump—will consist of varieties sufficiently near for pleasing comparison and advantageous contrast, yet not in that general jumble of undistinguishable foliage which renders the eye careless, till it passes trees as pebbles in a walk. And how easily and cheaply improvable are our surroundings. I visited lately two farm-houses. Opposite each ran the same high bank—in both farms almost useless land. But in one case it was a barren hill seared with dry water gullies. In the other it had been ten years planted, and now a beautiful growth of trees—so placed as to display in each its particular beauty—crowned the summit and came half way down the slope; the lower slope had clumps of shrubs, cared for and in luxuriant growth. The difference—the superiority of the last residence, from this little piece of forest work alone—forced itself on the least cultivated, and was indescribable. Yet the cost had been very trifling. In Ontario, nature offers us, in trees, what colour, what form, we choose of a thousand kinds. Of this great choice we have but to take advantage, to render our farms shortly as beautiful as the utter deprivation of the forest has made many of them hideous.

It may be suggested, in choosing trees with reference to beauty, either alone or in contrast, that the manner in which the different varieties reflect the light, and the kinds and lines of shadow produced, should be thought of. If we look at a Lombardy poplar we shall find that the lines of light and shade are upright and narrow. Then take a beech, the tree is in stratas; the light and shade in large level flakes. The white oak is again different from either; its fewer and larger branches radiating irregularly from the great trunk give large, uneven, but more grand and picturesque masses of shadow, and brightness than those of any other tree. The cedars often grow so close branched that their shadows are but one. The maple has numerous openings for shade and sun, but they are too many, too small, and too regular to do more than assist the general effect of the tree. If we examine foliage critically, we shall find a thousand differences to aid our selection, and one view of nature is worth many of books, for trees differ with localities, and the observer can soon find for himself how they appear where he desires to plant.

We generally plant that trees may be seen from a given point. If this central point be the house, the views of the house from the road, and towards the road from the house, are the chief vistas to leave open, not in straight rows of trees, but that, of the curving lines of plantation edge, of grove, clump, or single tree, none shall stand in the way of the view you desire while, as the eye glances along the opening it shall observe trees on either side in graceful harmony or appropriate contrast.

Without attempting an extended list, it may be said that of those in reach of all, for planting in the open, the oak (white and red) should be mentioned. When in leaf, the masses of its foliage reflect the lights and shadows as do few others. Before planting, with all trees it is well to observe the effect of this, and consider which you would choose in contrast. It grows a large and handsome tree, with a peculiar appearance of solidity and strength in the trunk and branches, and will thrive on poor soil. It is said that trees influence character. One can imagine that the daily walk along an avenue of fine oaks—their firm position—their rigid branches defying the storm—the steel-like and martial flash of their unbending and hard-edged leaves—might possibly arouse thoughts which would have some such effect.

"To convey by words alone," it is said, "an idea of the grand and varied expression of full-grown oaks would be a task as difficult as to impart the awful sense of sublimity inspired by rolling thunder."

"Jove's own tree
That holds the woods in awful sovereignty."—*Virgil.*

The beech.—Some object to this, as being likely to die out. In those cases when I have known it do so, it had been transplanted from the shade to the sun, which had beat on its bark. The forest bark is tender. (This can be shaded by a V board). But I have generally known it to do well, and it has this peculiarity—its habit is often to branch in sections above one another, giving broad level flakes of light green foliage across the whole tree, which, swayed by the breeze, give an admirable and ever-changing effect.

Its roots run close under, and sometimes lift themselves near the trunk, above the ground.

"There at the foot of yonder nodding beech,
That wreathes its old fantastic roots so high."—*Grey.*

The elm—Nothing can exceed, in graceful appearance, the lofty urn-like form of this remarkable tree. The beautiful curves of the branches into which the trunk, near the ground, divides, and which each then seems to form an independent tree, rising high by itself, then uniting with the rest in an immense spreading head., give this peculiar form. It should be remembered that where beauty is the object, trees which naturally grow as these should be given space to follow out their habit. Some pruning, when small, will greatly assist. For avenues, these trees need eighty feet between the rows.

"Of all trees," says Beecher, "no other unites in the same degree, majesty and beauty, grace and grandeur, as the American elm. Take them away, and who would know the land? Villages that coquette with beauty through green leaves would shine white and ghostly as sepulchres." The witch elm should be mentioned. It is more square in form and massy in foliage—equals in size the large oaks, and is one of the noblest of park trees.

"Harp of the North, that mouldering long hast hung,
On the witch elm that shades Saint Fillan's spring."

The ash is also a very beautiful tree, and, above others, sways gracefully in the wind. Its bark, too, in its many channelings, is very handsome. In our climate, with the long winter, the appearance of trees when destitute of their leaves is an important point. Trunk and branches, for long periods, are visible here. I have been where, of a summer afternoon, too warm for exercise, too bright for sleep, the long line of waving ashen foliage, from window to park gate, seemed, in the incessant change and continuous rush and play of its heavy leaf wreaths in the breeze, to arouse such succession of thoughts as passed the hours as pleasingly as might an agreeable book, or lively companion.

The nut trees—hickory, chestnut, walnut, and butternut—will, with care, all thrive and look well in many parts of our provinces. The length of leaves of the two latter give them a flowing grace so unique as to demand consideration in planting. Between their and ordinary foliage is a difference, not so great as that between evergreen and deciduous, but still strongly marked. It is that each leaf is of many leaflets, of a pale, yet warm and glowing green, and that, looking at the tree, you see that they seem to back each other, and hang rank on rank into the depths.

The basswood is a excellent tree to plant. It grows rapidly—soon the smooth tall sapling will swell into the thick rough trunk, and the broad soft leaves form a wide arbour overhead, while the mass of rich white blossoms will, if you plant trees enough, feed your own and your neighbour's bees till both shall have honey for winter. If we choose to be epicures about shade, it is thought that, as a rock gives cooler shade than a forest, so a basswood gives more agreeable shade than other trees. In this case, it is said to be owing to the foliage—the numerous layers of large, thick, moist leaves.

Then there are the larches and evergreens, the growth and appearance of most of which is elsewhere described.

Of the maple, hard and soft, much has been said elsewhere. For shade, there is no better tree, and in summer rows of maples, well-headed and thriving, form a most brilliant feature in the landscape—in fall—one almost gorgeous. A word also should be said concerning the soft maple. In most places there are some grounds which cannot well be drained, and are consequently unproductive. If soft maples be here planted, close at first, thinned out thoroughly in time and given full space, they grow to one of the finest of our many fine trees. Soft maples of which I remember the planting are now nearly four feet through at the base. Their growth, dividing, not single stemmed, and the broad branching head, renders them excellent for all ornamental purposes Their autumn leaf, too, is of a far more rich and delicate crimson than is that of the hard maple, and if you will plant them in a northern exposure, where they will receive the full weight of the first sharp frost, you will have nearly every fall the most pleasing sight nature can afford.

If we want a rapidly growing tree, there is the silver poplar. In twenty years I have seen it cut down—a tree three feet six inches through, seventy feet high, and sixty in spread, giving four cords of firewood to the tree. It is of very fine appearance—its leaves silver on one, clear green on the other side, and partly of aspen nature, then fluttering continually breaks, a white and emerald sea, over its whole surface. I have had the wood tested—as firewood it nearly equals maple—as beams it is twice as tough as pine—as panels it has a beautiful yellow grain. But, as before warned, near ploughed ground it will run and sucker.

The birch—a very beautiful tree, whether we choose the cut-leaf or the more ordinary variety. The bright white bark, contrasting against the green leaves, shows well in many situations. In winter, if you happen to pass a large birch, stop to examine it, and it will repay the time, and prove that trees were meant to please the eye in that as in the warmer day. The great trunk below—the subdividing pillars of clear bright white above—the wonderful ramification of abounding branch, twig and bud, all arranging themselves as they grow in a careless gracefulness of forest architecture which the painter can indeed imitate, but could never imagine, is worth thought and study. The branches of the weeping birch possess even a more mournful beauty than that of the weeping willow.

"Where may the grave of that good knight be?
It lies on the slope of the mighty Helvellyn,
All underneath a young birch tree."

"Nothing," it is said, "can well be prettier, seen from the windows of the drawing-room, than a large group of trees, whose depth and distance is made up by the deep and heavy masses of the ash, oak, and maple, and the portions nearest to the eye on the lawn terminated by a few birches, with their sparkling white stems and delicate, airy, drooping foliage."

All of these make good timber; all head out in the open, or if grown in close plantations will form tall straight trunks with small heads. But, with these, as with all trees, it must ever be remembered that if care be given (as directed elsewhere) they will grow *three times as well* as without. I saw a grove of maples at Eastwood this summer, planted *fifty years* ago by the employes of an old admiral, carelessly, and afterwards left to be knocked about by cattle. They grew—even that is surprising—but they are now only three or four inches through.

It cannot be too often repeated that trees will grow without care, but much more rapidly with it. We ask the value of a plantation—what money it will bring, and whether it will yield returns as wheat or barley. But consider the many ploughings and harrowings—the manure—the labour given, while we give the trees none. But keep the ground around the trunk shallowly stirred, and notice how soon the timber will expand—how thick the rings of each year's growth—what wealth of leaf and branch will spring above. To this list many more trees might have been added; but they will, to a great extent, be found mentioned in the body of the work, by those who have made their growth the subject of actual experiment.

I have the pleasure of appending here some notes on four trees from the well-known pen of W. Saunders, Esq., London, Ont., who says:—

I submit hereto a few notes on some forest trees which I believe to be well adapted to the climate of most parts of Ontario, and which possess so many points of merit that they deserve to be better known.

The Norway Maple, *Acer platanoides.* This is well entitled to a place in the front rank among useful and ornamental trees. It is a rapid grower, making, when well established, from one to two feet of growth each year, and in the course of ten years under favourable circumstances will attain a height of from twenty to twenty-five feet. The Norway Maple is a very handsome tree with a beautiful round head, clothed with long-stalked broad leaves, not deeply notched, smooth and of fine texture, with a rich, deep, glossy-green colour. This species, in common with most other European trees, is much more thickly branched than any of our native maples, and on this account furnishes a more complete shade. It is as early in leaf in spring as any of the other species of maple, and retains its foliage a week or two later in the autumn, enduring such early frosts as wither the foliage of our native species, without being materially affected, and only losing its leaves after the frosts become very severe. The bark of both the trunk and branches is neatly covered with longitudinal lines, giving it a very pretty appearance when deprived of its leaves in the winter. I regard this as one of the most beautiful maples in cultivation, unsurpassed as an ornamental tree, while its perfect hardiness suggests its suitability for more extended forest planting.

The wood is valuable for fuel, also for cabinet work or building material; it is easily worked and takes a fine polish. This tree is found native from Norway to Switzerland and was introduced into Great Britain in 1683, since which period it has been in constant cultivation there; it grows from thirty to sixty feet in height. In Norway and Sweden sugar is made from the sap of this tree. A maple so useful and hardy as this deserves to be extensively planted in Ontario.

The ash-leaved maple, *Negundo fraxinæ folium.* This tree, known also as the Manitoba maple, Box Elder and ash-leaved Negundo, is not a true maple, but is very closely related to that genus. It is a very rapid growing tree, found native in many districts in the North-West, and is said by botanists to be found from Canada to Carolina. Professor Macoun in his recent "Catalogue of Canadian Plants," says a few trees of this species are found in the valley of the Humber near Toronto; also eleven miles up the Kaministiquia river, west of Lake Superior, and on an island in the Lake of the Woods. It is abundant in all the valleys of the tributaries of the Red River and of the Saskatchewan coming from the south; also abundant on the streams flowing into Lake Winnipegosis. There seems to be two varieties of this tree, a southern and a northern one, the southern form being a comparatively slow grower and tender, having the leaves of a yellowish tint and more or less convex on the upper side. The northern form is extremely hardy, of rapid growth, darker in foliage and has the upper side of the leaves concave. Those who wish to plant this tree should bear this fact in mind and procure their young trees or seeds from a northern source, for should they obtain the southern instead of the northern variety disappointment is sure to occur. This tree is very extensively cultivated in the North-West and is the principal variety planted on the streets in the towns there. It is not a large tree, seldom exceeding thirty feet in height, and is said to reach its full growth in from fifteen to twenty years. A specimen tree of the northern form planted by myself six years ago in a rather poor sandy soil now covers a space of more than twenty feet each way, is fifteen or sixteen feet in height and has a trunk about eight inches in diameter near the base. It is a very succulent tree and in Manitoba is very liable to be attacked by green-plant lice, which secrete a sweet fluid on the foliage and this attracts large numbers of flies. I have not seen any instance of this in Ontario. From its rapid growth and low stature, and from the fact that if permitted it is low-branched, the branches almost covering the ground, it is well adapted for forming shelter belts often so important in protecting other more tender trees, crops, buildings, etc.

The Western Catalpa, *catalpa speciosa.* This species of catalpa is a native of the low lands bordering the lower Ohio and the banks of the Mississippi in Missouri, Kentucky and Tennessee. It is a vigorous and rapid grower, producing large and handsome foliage and clusters of beautiful flowers early in June. As an ornamental tree it has few equals, and notwithstanding its rapid growth it produces timber which, though soft, is extremely durable and of the greatest value for fence-posts and railway ties. It has not yet been extensively tested in Ontario, but wherever it has been tried it has thus far proved quite hardy. Having been selected by the directors of the Fruit Growers' Association of Ontario as one of the trees to be distributed among the members of the Association throughout the Province during the coming spring, it will thus be extensively tested within the next few years. On my own grounds near London it has stood the past three winters without the slightest injury, notwithstanding that on one occasion during that period the thermometer reached more than thirty degrees below zero.

The European Larch *Larix Europea.* This tree, so highly valued in Europe, has not yet been grown to any considerable extent in our Province. A few have been planted here and there for ornament, and a clump of upwards of half an acre has been planted on the grounds of the Agricultural College in Guelph for the purpose of testing its comparative value for forest growth. Trees planted by myself have grown within five or six years from two feet to twelve or fourteen feet in height. In Europe the Larch attains in the course of fifty years a height of eighty feet or upwards. It will grow rapidly in almost any soil and in almost any situation, and the wood is very durable and valuable for many purposes. The tree is very ornamental in summer, when clothed with its beautiful pale green foliage, and since it will grow freely on very poor land it should be widely tested. A recent writer has well said, "There are thousands of acres in Canada which cannot be converted into arable land, but which, if judiciously planted with European Larch would soon become most valuable and add immensely to the wealth of the nation."

PLANTING FOR SHELTER.

The following directions and ideas are from the Minnesota Forest Manual, and will be found valuable here. They are based on twenty years' experience :—

Among the objections to indiscriminate planting is this very important one. That a group or belt in the wrong place will cause the snow to drift and block up the road, while judicious planting will keep the same clear, and at the same time answer all the purposes of a wind-break. Suppose, for instance, that a farmer plants a close row or two, or more, of leaf-shedding trees, on the north or west side of the highway. Those who have for a few winters lived in the North-West know very well that the highway so planted, will be blocked with snow, and will probably be impassable the entire winter! How then, are we to prevent this? Let us plant our forest belt on the north and west boundaries of the farm; and on the south and east a single row of trees, eight or ten feet apart, to support the wires for our future fence. In this way, we get all the advantages possible from forest planting.

In the first place, we have considerably ameliorated the rigour of the climate; we have our timber lot easy of access, as it is on the highway; we have a row of trees for live posts, and for ornament, which will never cause the snow to drift, and we have the south and east sides of the farm open to the public view, so that we can see and be seen by the travelling public. And in addition to this, we can also use the outer and inner row of our forest belt to support wires for fencing; thus having a living row of fence posts around the entire farm, which will not need renewing in our day and generation. Then across the way, we have the benefit of our neighbour's forest belt, to protect us from the south and east winds, which hardly ever cause the snow to drift, as it has been observed that nearly all our blizzards come from the north and west; and further, we have a highway so plainly defined, that the wayfaring man need not get lost in the storm.

Plant heavily on the north and west, lightly on the south and east, evergreens, if possible; if not, what you can get.

If we would grow tall, straight for st trees, we must have them quite near together when small If too far apart, then they will take the form of shade trees, having short trunks and wide spreading tops, which are not desirable for a valuable forest of timber. Trees planted twelve feet apart, as some are doing, will never make a valuable forest. And when would we begin to thin it, in consequence of its becoming too close on the ground? I should not look for that time to come in my day; for when we cut one tree we have a space of twenty-four feet. If we plant closely, we will have an annual return for our labour a number of years before we would think of cutting a tree, if we had planted twelve feet apart, and the trees still left will be of far more value. They will not be mere shade trees, having short trunks. They will be tall straight trees, useful for any purpose. There is another benefit derived from close planting, for if well cultivated, in two years they will take care of themselves. But, if planted twelve feet, we may keep on cultivating at least five years, and then we have but little value.

"The value of close planting can be realized much better after the very sad experience of 1874. There are several points that may be urged for close planting. The force of these observations will be much better appreciated when we have carefully examined the facts which can be adduced by experience. Trees should be planted closely.

1. For the mutual protection of the trees.
2. For economy of culture.
3. For immediate protection.
4. For the purpose of securing available timber.
5. For the purpose of securing early returns from our planting."

Again, in speaking of planting twelve feet apart, he says:—

"Trees thus planted will not serve the purpose of a forest, but virtually become an open orchard."

Judge C. E. Whiting, of Monona county, Iowa, remarked in 1869 that he had at first planted Cottonwood eight feet apart each way, giving each tree sixty-four feet of ground. They grew well, but too many branches in proportion to the amount of body wood. He had adopted the rule of planting three feet each way, giving nine square feet to a tree, and in this order they grew tall and straight, soon shaded the ground, and in three years needed no further cultivation than thinning as became necessary.

It has been found that belts from seven to eight rods in width are, all things taken together, the best. These belts should be planted on the outside with some evergreen whose roots strike deep into the ground and do not spread near the surface, and whose leaves and branches will afford protection from the winter winds. In the center can be placed the deciduous trees. The trees for planting should be those best adapted to the soil and situation, and will vary much with different localities. There are, however, certain trees, such as the larch, Scotch and pitch pine, that are so well adapted to dry soils, rich or poor, and the Norway spruce, Scotch, Austrian and white pines, American arbor vitæ and ash, which are best for moist, rich soils, and which so fully meet the wants of the farmer, that they should always form a large portion of his planting. Belts composed of Scotch pines, Norway spruce, white ash, and European larch, planted from the outside of the belt, in the order named, have been found to meet, in almost every particular, the need for which they are planted.

Speaking of evergreen planting, it is remarked :—We drive over many weary miles of this kind of country ; but we must acknowledge that it is very cold.

But here, at last, we find a different scene. The atmosphere has changed,—it appears to us by contrast,—to that of Indian summer. We hear the wind howling in the air overhead, but we do not feel it as we did ; but, now, what is the matter?

Here are some hundreds of evergreen trees, disposed in groups and belts, about a farm-house, which we find, on enquiry, to have been transplanted from the forest a dozen years ago. Here we have a bit of summer in the middle of winter.

Nothing very fine yet, it is true, but promising much in the future ; but still enough to add much to the attractions of the home ; enough to reduce the cost of winter's fuel quite noticeably ; enough to shelter every living thing about the place in the coldest storms, of the coldest winters ; and, enough to repay the planter many times its cost in beauty alone, for "a thing of beauty is a joy forever," and is worth striving for, even on a farm.

When it is taken into consideration how easily the different kinds of native varieties are transplanted, and how very fast some of them grow, in almost any kind of soil, we are greatly astonished in traversing the country, to see how very few people have availed themselves of the bountiful supplies which nature has furnished.

That sort which is found to succeed best in your locality, is the sort most largely to plant. For instance : In this part, there is nothing like the white pine. We have planted a hundred fold more of this than of any other variety. One on the lawn, twelve inches high when planted thirteen (13) years ago, measures to day, with tape-line, eight (8) inches from the ground, forty-one (41) inches in circumference, and twenty-one (21) good long paces around the lower tier of branches. The pines—Austrian, Scotch and black, are all good. So is red cedar and arbor vitæ. So, also, is balsam fir.

Any soil that will grow a good crop of wheat, will be suitable for evergreens. It must be well prepared—deeply plowed, and finely pulverized. A good plan is to prepare a strip, where there is to be a permanent wind-break, on the north or west side of the lot, which it is desirable to improve ; and for two rows of trees, of large growing kinds, as the pines or spruces, about twelve feet wide ; for smaller growing sorts, ten feet will do. In this strip mark out two rows, or draw two lines five feet apart for the large, or four feet for the smaller growing kinds.

Now we are ready for the trees, and if they are to come from the forest, we choose a rainy, or at least a cloudy day in the spring (never in the fall), just about the beginning of seeding ; or, if time is no object with you, wait till the buds swell (don't wait till they have grown), the time of which will vary nearly a month, in the different varieties. This is the *very best time* to move all sorts of evergreens, although we know that an expert can transplant them successfully at almost any season of the year. Take your waggon, a few wet horse-blankets, to cover the trees as fast as dug, and go to the place previously selected, and carefully dig and cover up such trees as you wish, always remembering—*and I wish to impress this fact upon the mind of every one who undertakes his business* :—THAT THE ROOTS MUST NOT BE ALLOWED TO DRY IN THE LEAST, *or be exposed to the sun or wind for a moment, if you wish first-rate success, and if the roots should become nearly dry, throw them away at once*, as it will only be labour lost to take them home and plant them. And also, if you wish to make fine trees in the future, you must be content to select small ones now, from two to eighteen inches high ; the smaller the better. Nursery grown trees may safely be somewhat larger ; but even in this case small ones will be best, and they will certainly cost less. If you are obliged to use nursery grown trees, select to order your trees early ; *don't be put off till June.* Two or three-year old seedlings, which will be from two eight inches high, will be most profitable, but if it suits your case, get them larger.

Having brought our trees through the first season all right, we are apt to congratulate ourselves that our work is done. On the contrary, here is just where many planters suffer shipwreck. Now is just the time to make or mar the beauty of our trees, if we wish them to be what evergreens ought to be, with branches sweeping the ground, in all the luxuriance of full foliage. In order to attain to this perfection of form and foliage it is necessary to keep down every vestige of weeds and grass while the tree is making its new growth, as the young shoots are then very tender, and those in contact with the grass will be smothered. This can best be attained by thorough cultivation where we have them in rows. After a tree has attained its annual growth, say about the last of July, it will be able to take care of itself; yet, if time can be had, it will be well to keep all grass and weeds away from it always. For trees on the lawn which are not yet large, a good plan is to invert the sod with the spade to the depth of three or four inches each spring, say in May, six inches to a foot outside the lower limbs. This keeps the ground mellow, and also, for a time, kills the grss; but this plan will only be allowable in good, rich soil, and will not do at all in sand. Here we must mulch with good rotten stable manure, and to get the full benefit of it, the operation should be performed every fall, and if too much material should accumulate, scrape away the old before applying the new. And this mulching is not understood as it should be. We must not pile up little conical heaps of stuff about them, but spread it beyond the lower branches six inches or a foot, quite thickly on the outside, and growing thinner as it approaches the centre, where it is not necessary to have anything, as the foliage itself will keep that part of the earth moist; and thus we have a kind of resorvoir, in the middle of which is the tree, and which will retain the moisture which falls on the branches. In this way we keep the soil rich and loose for the small rootlets, which will always be found to extend further out from the trunk than the branches, and of course these must be fed if we wish the tree to prosper.

After lawn trees, in good soil, have grown to large size, say twenty feet and upwards, it is only necessary to attend very carefully to keeping down the grass, mowing once in ten days till the tree has attained its annual growth, which will be as before stated, about the last of July. If the soil is poor and the tree does not seem to do well, a good plan is to mulch *heavily* with good rich manure in the fall, and remove again in the spring, after the rains shall have washed the substance of it into the ground. Neglecting to attend to these things will assuredly, in time, cause the lower branches of most varieties to die out, and thus give us a poor, scrubby-looking specimen, only fit for the woodpile.

Never plant your evergreens in the fall of the year, but do it in the spring as early as you can obtain the trees.

Do not set your trees in the ground deeper by an inch than they stood in the nursery. Use no manure of any kind in planting evergreen or larch, but let the soil be mellow and friable, without lumps in contact with the roots.

Never dig deep among the roots of your trees, but keep the soil mellow and moist at the surface by a light mulching of bruised straw or hay, that will prevent the weeds from growing.

There are two different ways—each having its advocates—one by mulching, one by keeping the ground stirred above the roots of a tree. But if the last be used, we must remember it is only the surface we stir. This will vary in different trees. With some we may go much deeper than with others, yet not disturb the roots.

On tree pruning, a great difference of opinion exists. You don't want to prune your trees late in the winter, nor when the sap is flowing freely. As to the exact time when to prune, I do not attach much importance; so do your pruning as soon as the tree needs it. When you grow a young forest, you can almost do your pruning with your thumb and finger, by pinching off the young shoots soon after they start. But, when you have neglected this, and the limbs have been allowed to have their own way any length of time, then the pruning knife or saw must be brought into requisition. In my own experience, I have found any time after the leaves are full grown, until late in the fall, is a good time enough to prune. I doubt if any rules can be properly given on this subject. Your own judgment and common sense must direct you largely in this matter. For wind-breaks, very little, if any, pruning is necessary. For a shade tree, you so prune to form a wide spreading top; but, for a young forest, in which the growing of timber is the main object, you so prune as to get a long, straight body as free from branches as possible, and if your young forest has been as thickly planted as it should be, nature will do most of the pruning, nearly or quite as well as need be.

Bryant says:

"In pruning young trees designed for timber, the symmetry of their form is the first consideration. When taken from the seed bed, all side branches should be cut of; only one leading shoot should be allowed, which must not be permitted to fork. All side branches which approach in size and vigour to the leading shoot, should be shortened or cut off entirely. Suckers from the base of the tree should be cut away."

Fuller says:—

"If the trees are properly pruned when young, there will be no necessity for taking off large branches when they become old. Too many branches must not be taken off at one time, as leaves are indispensable to growth; but young trees may produce more leaves than is necessary for a healthy growth, and a reduction in number may increase rather than decrease strength. * * * Pruning should not be practised to such an extent that the tree may be eventually weakened or checked in growth. * * * Trees, when standing alone, should have at least two-thirds of their height occupied with branches. But, when grown in thickets, and for the purpose of producing timber, this rule may be reversed, and the branches occupy only one-third, varying the rule according to the natural habit of the tree. * * * Midsummer is the best time to prune all resinous trees."

In pruning, use a sharp knife, and make a clean, smooth, upward cut. Should the branches be too large for a knife, use a fine tooth saw, smoothing off the wound with a sharp knife. Where large wounds are made, an application of common grafting-wax, or cow-manure when warm, will exclude the air until there will be little danger of decay.

In a young growth of natural seedlings, the plants are often densely crowded; but as they become larger the feeble ones die, and others lose their lower branches; and so from year to year, the numbers diminish in the struggle for life, until but a small part of the first number comes to full maturity. The careful forester seeks to imitate this process of nature by securing a sufficient growth for shading the ground from an early period, and by reducing the numbers as the trees increase in size. These labours include the clearing out of the worthless bushes and brambles that never come to useful size, but is chiefly secured by giving the greatest opportunity possible to the most valuable kinds No rules can be given for the execution of this work, without knowing the conditions, further than the general statement, that it should be done wherever required, and as often as may be necessary. In pruning, always cut close to the body or limb; then it grows over easily. If a small projection be left, that also grows over, and rots inside, doing much harm.

THE WATERSHED OF EASTERN ONTARIO.

There is no part of the science of forestry more beneficial than that which teaches to keep covered with forest the principal heights of land. These, especially those which are termed watersheds, when covered with extensive woods, form reservoirs which supply the sources of numerous rivers, give moisture to the numerous small lakes and watercourses which intersperse the slopes below them, and preserve throughout the whole country a fertility, invariably much impaired when the forests above are destroyed.

The chief watershed in Ontario extends in the shape of a crescent, the centre trending to the north, the ends touching respectively, near Kingston and Lake Nipissing. From and through this, many watercourses run to the east towards the Ottawa, and many more in a westward direction towards Lake Ontario. On this elevated section of country, therefore, the forest should, above all other places in Ontario, be preserved.

It happens luckily for this purpose that much of this territory is of an inferior character, not adapted for agricultural purposes, while it contains much valuable pine and other timber which it would be extremely desirable to preserve, both that this height of land may remain wooded, and to answer as a reserve of timber.

In order to examine this matter thoroughly by personal observation, I have, this summer, travelled from Ottawa to Lake Nipissing, and from thence back to Kingston, thus passing around and through much of the district in question, observing what progress had been made therein, and obtaining from lumbermen engaged in its forests, opinions as to the best method of preserving them.

A few words may well be said here concerning Ottawa. To this point logs are floated from most of eastern Ontario, and from all that portion of Quebec which the Ottawa drains, Here, every day, all summer through, comes the stream of timber floating down the turbid current, after its journey of hundreds of miles down the Ottawa—the "Utawa's tide" immortalized by Moore—passing by many a dense forest and many a fire-wasted shore, or, before that, down the dark and winding Mattawan, the Petewawa, home of many a rapid, the far stretching Coulonge, or even, now that steam has overcome the obstacle of the intervening neck of land, from distant Nipissing and many streams that terminate therein. There are numerous mills in the back country, and what they cut passes on by rail. But the great mass comes in log and is sawn up at Ottawa—that city of two great industries—the home of legislation and of saw-mills.

Where Ottawa stands, the river pours its dark waters over a ridge of rock which, at that point, crosses the country. The ridge does not span the river in a straight line. Its centre is bitten out by the tooth of time, and into this central gap the river, flowing till then broad and level above, pours all its waters suddenly from three sides at once. The result is marvellously beautiful—the whole immense acre-broad cauldron boils in milk-white mountains of half water, half vapour. This is the Chaudiere—the boiling pot. This vast mass of falling water is turned to the uses of science—clusters of great saw-mills occupy all along its edge, using everywhere the overplus of the stream, and are even built out over one side of the cauldron itself. Here they are ever at work, their great chains drawing up a constant succession of logs from the river; you see a dozen soaking monsters at once on the floor opposite, each being carried hither and thither to the great saws that evermore go up and down—a log passes you, losing two outside slabs as it goes; it comes back through a gang of saws that cut it into twelve boards; it passes away on wheels; it is succeeded by others and again by others—a treble line of timber day and night is passing in as logs and out as lumber. Down the river perpetually come logs by the thousand, divided off above the mills by booms, each coming to the mill of its owner, directed upon the toothed chain by the pike-pole, and drawn by it to the saws. Here, too, continually small portions of rafts—a score of pine logs with, it may be, four heavy beams pinned above—each with its crew and their little wooden shelter from the rain, pass down through long narrow artificial waterways planned to round the cataract, by gentle successive falls, to be united in larger rafts below. All the scene—the numerous mills, the centres of enormous piles of bright, new boards—the ever coming and going lumber—the rattle of the different machines from all quarters, the all-pervading sound of a hundred great saws forcing their way through wet pine wood—the crowding thousands of men, horses, and carts everywhere, swarming in the mills or manœuvering in the roadways around, give a picture not to be surpassed except, perhaps, by itself at night, when the electric lights colour with silver all the scene, and show in vivid glow the dark waters of the Ottawa, and the freight of logs ever pouring towards the open jaws of the mills. You might imagine the workers the swarm of demoniac Genii forced to build, on pain of Eblis, Aladdin's palace in a night.

A great part of the city of Ottawa is a city without residents—a city of lumber. Here are piles of lumber—square piles—quadruple piles—diagonal piles, built tier on tier high in the air above—lumber for all intents and purposes—acres of inch boards—mountains unending of joists, beams, sheeting—every sort and kind of lumber which our forests give; streets of lumber, blocks of lumber—miles on miles of lumber—and when past it, it is lumber still, for here are numerous large houses crammed from earth to rafters with short lengths for pails, for boxes, for purposes beyond count. Fast as the great mills build the city up, so fast great railway trains and multitudes of immense barges pull it down and carry it away. The air is redolent with the smell of lumber you breathe pine and resin at every step. From here again this great mass of wood, coming but by one channel, leaves by many, and spreads itself by a hundred railways over all the Northern States, and by river to Quebec, to England, and to the Continent.

At Ottawa, the head-quarters of many leading lumbermen, some valuable opinions were obtained from Messrs. Pattee, Bronson, W. Mackay, J. Gordon, and others well acquainted with the Ottawa woods.

Leaving Ottawa, there is nothing to chronicle in the interests of forestry until Pembroke is reached, where many gentlemen experienced in lumbering and forest operations are seen and their views obtained.

After Pembroke, the next stopping place is Bissett's Creek, where :—

Mr. McCormack, the manager for Young's estate, attends to extensive lumbering operations, and proposes to take me to the nearest scene of action, twelve miles over the hills, which here are seen in all their autumn beauty. A lumber waggon is equipped by filling its box with clover hay. Mr. C. sits in the rear, I and the driver on the high spring seat in front. "Get along," he cries. The whip is cracked, two sturdy horses are doing their best, and we are rolling, jolting and tumbling over the roughest road in the universe—up great ranges of hills, down them, over rough corduroy logways in the gullies, over rocks on the level, over great stones everywhere. The waggon rattles down a hill, and rushes across a hundred boulders—you are thrown violently against your companion—you are thrown to the other side—you fly a foot upward by the action of the springs you fall a foot downward by the action of gravity. Holding to the seat till your arms are numb, you ask what is to be the length of the journey. "Four hours," replies the imperturbable Mr. C. from the rear. Rattle! smash! bang! You wonder what four hours in purgatory are like—or whether the German stone-roller trough of torture was worse than this; and at last, seeing your companions not at all affected, you begin to get used to it. The prospect from the waggon is but one of many—it is a *brule*. Sixteen and fourteen years ago—one great fire meeting the dead edge of the other—a tract here seventy miles by ten or fifteen, almost without exception a forest of noble pines, was burned into desolation. Pine went there which would have brought many millions now—a forest was destroyed which, continuing a forest, would have brought large sums yearly. Far as the eye can see, closely standing, are the dead trunks of great pines, below them a youthful forest of poplar bright with yellow, and birch still in its greener hue—below again a dense dark red carpet of ferns—of blue-berry—of wild peppermint. From noon till night we toil along through a scene of such wilderness where the partridges are

"So unacquainted with man"

that they walk like barn-door fowls beside the waggon. At last a ruddy glow, not from door or window, but from the roof of a large, low log-house, and half-a-dozen "Bon jours" from choppers lounging outside, show that we have reached the shanty.

> "It is a lodge of ample size
> Though strange of structure and device
> Of such materials as around
> The woodman's hand had readiest found.
> Lopped of their boughs—their huge trunks bared
> And by the hatchet rudely squared
> To give the walls their destined height—
> The sturdy oak and ash unite."

But not exactly so—all here is pine. The shanty is forty feet by thirty inside; a great square opening in the roof lets out the smoke from a fire in the middle of the floor below—earthen there—pine all around. Rows of bunks, two stories high, formed of logs and slabs and filled with hemlock boughs of pleasant odour, covered with thick grey blankets, form the beds. A line of flattened logs form benches round the room. The ubiquitous cook is balancing on an immense crane vast pots over the fire, and soon all are busy with tin pans of bread, pork, beans and strong tea. It is an interesting and animated scene—the great bright fire lighting up the sturdy forms and bronzed visages around—the sober dress of Ontario—the bright colours and gay sashes of Quebec—the chatter in French and English—the pipes inevitable and numerous after supper, adding to the smoke-clouds "rolling dun" through the roof, while a fiddler, always found in such an assemblage, plies his cheerful instrument for hours. At last, however, drowsiness prevails, and every axeman finds his bunk, pulls his blanket over him, and a chorus of snoring fills the air.

Next morning we view the forest. It is a vast pine limit, extending—here dense with far stretching succession of multitudinous pines, there lightening with a grove of maple or of birch; here again opening into a beaver meadow, its rank grass an island of herbage in the forest sea—for many miles, from the near Bissett to the far Petewawa. The foreman, Mr. Hall, accompanies us to the places where trees have been lately cut down for saw-logs, great piles of which are already placed on roll-ways ready to be taken by the winter sleighs to the river, here four miles off. All around are spread in confusion the *débris*—numerous balsams cut to clear the way, piled in heaps around or scattered, "Anywhere, anywhere out of the road," rejected butts of logs, great tops of trees, a ready fire-road indeed should sparks in summer drought light on their inflammable surface.

"Yes," said Mr. Hall, "no doubt they are dangerous. There would be but one way, if we were to clean up after ourselves—that is to carry them all into piles in as open spaces as possible, leave them till next year, and burn them then; they would not burn well when fresh. I do not know what it would cost; that would be found by experiment—but no doubt it would leave the forest in a less dangerous condition."

Everywhere here, the whole week long, resounds the crash of falling pines. Two athletic young fellows, clad in the strong home-spun of the settlements, if they are lucky enough to have those who will weave it, if not in the less durable "store goods," yellow leather moccasins, bright sashes round their waists, the great rolling muscles standing out and working visibly on arm, back and shoulder, stationed at the foot of a tree, swing with easy grace their long-handled axes against the trunk, great chips flying right and left like hail. The tall tree totters at its base, and falls, the sound reverberating for miles. The choppers climb on the log, trim the branches as far as they need; one, two, three or more lengths are cut from the trunk, and it lies till the horses and sledges can draw it to the river.

All through this great extent of pine and lesser hardwood—in densely-wooded slope or opening of lake and beaver meadow—vales dark and deep as that of Hinnom, where the great pine tops, broad and green, scarce reach the level—mountain tops where they wave dark defiance to the elements—everywhere lie the trains of great chips—the abandoned tree-top—the smaller trees cut to clear the way, now obstructing it—all around. It has been lumbered over for years, and with care might be forever. "No fires just here of late," says the foreman, "but there have been many in the country.

After our journey back to the depot, from a high plateau, we observe one of the many magnificent views obtainable here. For thirty miles you look down the great valley of the Ottawa—the distance closed by high mountain ranges—the sides bounded by them twenty miles apart. Along the valley, broad, tranquil, its gently moving waves shimmering at hand—placid in the far distance—the great Ottawa rolls its sinuous length. Half way along, rounding its way beside a large island, which, covered with undulating poplar, bars its course, the Bissett joins the greater stream. Here lies before you at this season an amphitheatre so immense, of colours so varied and so gorgeous, as scarcely eye hath seen elsewhere. All these circling mountain sides are clothed in the richest colours. Here the waving poplar covers them with the brightest yellow, there, where only undergrowth flourished they are dark red brown; farther again a forest of young pines, gleaming bright green in the sun, ascends from river to summit, and everywhere interspersing, wearing the gayest hue of all, are great stretches of the soft maple, crimsoning all the landscape, and adding greater beauty to what, even without it, were most beautiful. But to view it in perfection, you must approach it in early morning, when the dense mist, rising from the low grounds renders all else invisible. Presently this will rise, gather itself in great billowy columns across the sky, move in rolling masses to the far distance, and out of sight. Then the curtain of nature has risen, the vast panorama is spread out before you, mountain and valley, forest and herbage glistening with dew; bright with the morning sun, and the great river below all, an immense serpent of molten silver, winding his devious way to the distant sea.

The next stopping-place is Mattawa; where further statements from Crown Land Agents, storekeepers, settlers, etc., are had. After leaving it:—

At six o'clock in the morning we reach Mr. W. Mackey's mills at Benton, where, as the light grey mist which shrouds all, gradually disappears, you see first a pretty lake shining below the rising wreaths. A little more and shelving hills appear, covered with yellow brushwood, surrounding it on all sides. And later yet, when clear and bright, the landscape glitters in the autumn sun, we see the destroying fire has wrought terribly here. Far around as the eye can follow, a breadth of many miles is clothed with brushwood, little pines, infant cedars, multitudes of sapling poplars, forming in red and yellow shadings a brilliant contrast to the shining sheet of water in their midst—but, nevertheless, a sad one. For all among these are the stumps, the trunks, the standing spectres of what was once one of the most valuable pine forests in North America. How rich in pine it was may be seen by the limit Mr. Mackey possesses just where the fire stayed its work, a block of ten miles square which he has cut through again and again, and which is yet a grand pine forest, fit to remain, fire permitting, a productive pine forest for ever. Here great rafts of timber have been taken out of small spaces, and saw-logs innumerable floated down to the saw-mill established near, which is in full operation, the roll and dash of its rushing water striking steadily on the ear, intermingled with, at momentary intervals, the sharp hissing cutting sound of the circular saws as the logs are driven against them. It is a saw-mill so complete, well adapted, and thorough for its particular purpose, as to merit description. Here, above the water, stands a young *habitant*, bright in parti-coloured cap and jacket, his pike-pole guides a monster floating log near the spiked chain, it feels the point, it shivers, and seems feebly to resist its fate, as it is dragged up into the mill and deposited on a platform; rolled thence on a movable one, which, bearing three men, passes rapidly back and forth beside a circular saw; it passes up and loses a slab, back again, another is gone, and both run automatically along a platform of rollers outside; the remaining portion is rolled to another platform, manned likewise, and cut into boards; they pass to a stationary one covered with rollers, where a small saw squares their ends, and at this point they are out of the mill and borne on tramways to the board piles. About fifty men are around the mill. It is the most busy of scenes. All day the logs climb in—all day the boards pass out.

The manager here, Mr. Ryan, thinks that but little can be done, unless at great expense, to clear the forest of rubbish after lumbering Chopping down the heads, he says, might serve a good purpose where the ground is flat, by keeping the pine foliage damp till it rotted; but on a high locality or hillside they would still be dry. The chips he thinks are safer on the ground than piled.

This mill, as remarked, is in a burnt country, as it is called—or *brule*—of which there are, unfortunately so many in Canada, and to which, still more unfortunately, each passing year adds others. It is many miles in extent, and from the mill, which occupies perhaps a central position, we travel eight miles before we reach the woods, on that primitive conveyance called a buckboard—a carriage calculated, of all others, to pass over the roughest roads with the least amount of jolting—though so rough are these roads that that amount is very large indeed. All the way the great *brule* spreads out before us—a vast extent of rolling land, brown-red with the dying wild summer herbage over many a sloping hill, beautifully contrasted with thick groves of gold-leaved aspen, covering many another, themselves again contrasted, every here and there, with bright-green pyramids of balsams, and young soft maples of brilliant crimson hue. Over all the prospect, front and rear, right and left, as far as eye can reach, these successive hills stretch away, now and then varied along the river bank by a lofty precipice of granite rock. Everywhere, amid poplar, balsam, and underwood, rise high the gaunt dead pines; everywhere their great trunks lie rotting among the brush. The fire which took the forest has not spared the soil. Much of this is burnt so deeply that the life-giving humus has departed; a couple of crops would probably render it barren. The earth, too, is almost paved with large stones, as most of the road painfully witnesses to our shaken frames. At last we reach where, on a flat, receiving the fertilizing wash of surrounding slopes, a place has been found capable of making a farm for the lumbermen,—three or four large buildings—half barn, half storehouse—as usual, surrounding a large quadrangular courtyard. We enter the large kitchen occupied by two French Canadians, a stout lady busy cooking dinner, a thin husbandman busy waiting for it, and an army of cats and dogs— Newfoundlands, spaniels, puppies, and tortoiseshells—all, bipeds and quadrupeds, welcoming us with the kindly manner of the native of Quebec, which even their animals seem to imitate. The feast is spread—masses of pork and potatoes, eggs, bread and butter, and the ubiquitous tea, in a tea-pot of two gallons, suggestive of occasional numerous and thirsty guests, glad of refreshment after many an hour of axe-handle and handspike. Dinner over, the horses are harnessed, and we soon arrive at the forest itself.

These broad, dark, dense woods form a magnificent specimen of a reproductive pinery. Far above you—a hundred—even sometimes a hundred and fifty feet, on all sides—straight, many branched, upright, tower the dark pine trees. These have been carefully used: the largest have been culled out—the last cutting here is three years ago—but still it is thick with pines of all sizes, from the half-inch sapling to two-feet through and more. Most of these are over a foot and a half, and of full height. These now rapidly add to their thickness, and fifteen years will give large trees again.

Every here and there, lie the long stretches of pine chips, four feet, five feet, two feet long, from the stump to the abandoned head of the tree, projecting all its branches—the *chevaux-de-frise* of the forest. These are not now dangerous—the needles—the pine leaves—being rotten. My guide, young Mr. Mackey, of some experience in lumbering, is decidedly of opinion that a few minutes work bestowed on each head at the time of chopping, in the way of cutting down the branches, and allowing them to fall to the ground, would rot the needles much sooner, and render the forest less liable to fire. As to the chips, it appears that to spread them would probably be a great advantage. A separate chip gets grown over and damp, while in piles, left, the upper ones lie dry for years. It is noticeable in this wood that there is much less timber carelessly felled to cut out logs than is observed in some others, and that this is evidently a forest which will, if given the present care, and fire allow, remain a forest. We can go on for hours; throughout the great pine wood, mile after mile, still you travel in the dense shade of the evergreen branches far above; still, rank on rank, grove after grove, the huge upright trunks stand all around you; still to right and left, front and rear, is one broad receding vista of these great pillar-like trees. Miles on miles, wherever you go, the brown-red carpets of pine leaves lie soft beneath your feet, the great rough-barked trunks rise column-like by your side, and far above, between you and the sky, the intermingling branches, with a murmuring cadence the pine-forest only knows, sigh mournfully in the breeze. A half mile on, we come to a place where hunters had carelessly dropped fire. It ran for miles, spoiling many a goodly tree, which now, its bark dead and blackened, stands in the path, but luckily rain came in time, otherwise this great woodland might have been but a *brule* now. The stream which rushes along the forest-ravine flows through the *brule* we travelled over, down to the mill we have left, and carries there the great flotillas of logs we saw waiting their turn in the stream above the mill. Half way there, a curious instance is visible of the manner in which lumbermen overcome natural obstruction. There was a long stretch of very difficult rapids foaming through a narrow and tortuous bed, the walls on either side high rocky precipices. This pass was dammed, the water raised to a great height, and a shoot made to one side, and its waters poured along a trough or slide, supported on massive timbers, for twelve hundred feet past the rapid. The slide is of thick plank, three or four feet wide, and two or three deep. The logs of course float on the surface of the raised water behind the dam, are directed into the slide, and pass with lightning rapidity to the calmer waters below, thence floating unobstructed to the mill, are sawed there, sent to Brockville, and thence, through an American firm, the world over. Besides these, large rafts, from the same sources, but of squared timber, go to Quebec.

Leaving the woods, we drive back over the long *brule*, bright with the gleam of evening, across its purple, crimson and gold surface—a thing of beauty, but not of use, and reflect that all this—hundreds of square miles—when Mr. Mackey came here, was a pine forest as beautiful and valuable as that we have left, and but for the careless use of fire, would have continued so. We see from here, in another limit across the river, a shanty of the kind previously described being erected, and near us, on this side, is the cook, two tents near him, but the whole ground around covered with bales, boxes and tools, waiting for the cover which the newly-roofed house will give. He, in the meantime, tall, young and white-aproned, is busily employed, with his vast pots hung over a glowing fire of birch coals, and, like the mountaineer in Scott,

"Gives us of his Highland cheer."

Not the "hardened flesh of mountain deer," though a bundle of fresh slain partridges lie under his bench, but the salted flesh of the swine, with bread, butter, and molasses *ad libitum.*

The next point in our journey is Callendar, one of the head-quarters of Booth & Co.'s large lumbering establishment, where we are hospitally received by Mr. Mark Cahill, acting at Callendar for Mr. Booth, and spend the next few days in going over part of their limits.

In travelling next day with Mr. Cahill, he pointed out from the summit of a hill, overlooking a large lake, a great and almost untouched forest, mostly of pine. The scene was grand. Around us lay the grassy field of an old abandoned clearing, backed by the forest from which we had emerged, a gorgeous mass of autumn's richest coloring—high poplar clumps of leaves like waving gold, tall slender pinnacles of spruce, their light green foliage hung with moss, piercing the lofty air, while every here and there against the green and against the gold the soft maple fresh tinted by the last night's frost, shone with an intensity of delicate crimson I have never before seen equalled. The fields sloped downward to the inland lake, a vast circular sheet of little wavelets, their gently breaking edges flashing in the afternoon sun till they faded away in the deep shadows of the dusky wood which bordered the opposite shore. No gleaming colors there, all is sombre; for here we view that sight beyond others magnificent, the waving crests where far extend—right, left, and centre—to the extreme and distant horizon—the dark green billows of the great Canadian pine—an ocean of verdure alternately everywhere gleaming into brightness or deepening into shade, as the wind sweeps by, sending across the lake to our ears that deep, murmuring, softened Æolian chant which dwellers by the pine forest only hear. It is most beautiful, and might remain so. Yet it needs but a match—a careless hunter, a settler pressed by want and anxious to grow what wheat the scanty soil will yield, and this vast extent of millions of dollars' worth of pine—its possibilities of growing millions more—shall be a blackened wilderness of worthless trunks, scattered above a soil burnt into a barrenness well-nigh utter. Part of this was in Mr. Booth's limit—part is Government land. It is a wood the forester would love to keep a wood.

In the evening of the same day, examining the state in which a bush was left after most of the logs had been removed, being taken, in this case, both for square timber and logs, we found that the surface was thickly spread, here and there where trees had been squared, with pine chips of all sizes, and close by, scattered in confusion, the heads of the trees, with others, which had been felled to assist in the operation. Undoubtedly, there was much more lying rubbish than elsewhere. But Mr. Cahill was of opinion that the chips on the ground soon grew damp, and would not catch fire from sparks, though a fire once started, they would give it more material. On being asked whether, if the limbs were chopped off the tree heads after each tree was cut down, so as to form a dense pile on the ground, it would not be safer, he doubted it, as even then the top would be dry. It was, as he said, noticeable that rubbish abounded everywhere—dead branches in heaps, dry combustibles on the ground in all directions, which was ready to catch and carry fire, even in the places where no timber had been got out. To clean up after the lumbermen would be, he said, a great expense, and yet much would be left.

On Monday we left Callender in the small steamer owned by the Booth company, and passed along the shores of a beautiful little lake, called Nosbonsing, its waters bright with sunlight, its banks on either side heavily clothed with forest. Here and there along the banks are the small clearings of settlers, but the soil, light and sandy, seems to promise little for agriculture.

It is so in much of this rugged land. But the scenery is of wonderful beauty. Our course, bending with the winding lake, shows a long succession of these inland waters.

Here a dark pine forest fringes the shore, its great trunks deepening into blackness till lost in the heavy gloom within.

"E'en to tell,
It were no easy task, how savage wild
That forest, how robust and rough its growth."

Beyond this, a stretch of hardwood wreathes the water's edge with gold and crimson. While we admire its beauty, it is past, and all the shore is clothed with low dense masses of balsam and cedar. Then again for miles the bank will show poplar and birch alone. The light and shade, too, in this clear northern air are often exquisitely contrasted. Near the bank your boat may lie in the dense shadow of a dark forest—a thousand feet off, the sloping sunbeams turn the lake to silver, and light, in breaks and gleams, the great sea of foliage which clothes the opposite mountain, till it is lost in the dark and distant ridge which stands against the sky. In this pristine beauty much of this country should remain. There is perhaps, here and there, the soil for a few good farms, but a light poor sandy loam, scant of lime, and scant of humus, seems every where around. It will grow, as long as we choose to preserve them, successions of magnificent trees, and, in the fast approaching scarcity of timber these will form a valuable crop. But for the farmer, settlement on many of these lots would mean a life of penury and unrewarded toil.

But now, over the broad waves, through the purest air, the little boat, brilliant with white and green paint, puffs rapidly along, dark masses of foam-tipped water rolling from her prow till five miles are passed, and we land half-way to the head of the lake, where a waggon awaits us, its team of black horses quite unmanageable as the steamer nears Three miles of a ride through a forest of birch, poplar, maple, balsam and spruce, bring us to the lumber depot, a farm of nearly two hundred acres, with many log buildings, great sheds with hundreds of lumber sleighs piled therein, and a comfortable house. Here we dine, and in the afternoon go by waggon to another lake beyond, where two stout oarsmen —French and Irish—row us a couple of miles to a river mouth where are camped a gang improving the dam, their house of logs and log-roofed, with a great opening above for chimney, whence rises the smoke from the fire built in the centre of the floor. It never, we are informed, smokes. Outside is the cooking apparatus—immense pots and frying-pans on great burning logs. The dam is examined and closed, with the effect of lowering the creek two feet for five miles, so that a gang of men clearing it out for next spring's drive can blast the stones in the bed. All the way are carefully explained the operations of the lumbermen, and we note again the *debris* left in the forest whence logs have been taken—the long lines of chips, the fallen head heavy with projecting branches, the smaller trees felled for logways and for supports while the log is being squared. My lumbering guide insists that it would be but useless to remove the rubbish, as even the virgin forest is full of lying trees. I do not agree with him. The tree falling here from natural causes is old and rotten; that felled is strong and sound—the numerous heads fill the forest with piles of very inflammable matter. The chips perhaps had better lie; they become damp on the ground, while, if piled they would dry; but every head of a tree cut should, I consider, have most of its branches "chopped down." They would then lie flatter on the ground, keep damp, and rot the sooner. This would cost but little trouble, and would be the next best thing to piling and burning, which would cost much, as, for safety, it would have to be done in winter. We embark again, and row, as evening shadows the lake, across its waters, wild ducks floating unconcernedly near us as we pass. All around a border of dead balsam trees, gaunt and bare, fringe the shore, and above them rises high a broad embossed ribbon of yellow and red—the birch and maple. The balsams are killed by the dam rising the lake. No clear inland water this—it is dark and brown with iron and copper pyrites; in our wake is a muddy foam. The depot is reached again, and in the morning we again meet the steamer at the rustic landing, and sail on Nosbonsing to its termination, whence a railroad, just built by the Booth company, leads to lake Nipissing, five miles away. Here we dine—all is hospitality at the lumber camps—and watch the great wooden room, with its numerous pine board tables and benches, filled with a noisy and hungry crowd of French Canadians, Irish, English, and more—all apparently joking and talking in six languages at once. The tables are piled with food—boiled salt pork and beef—fried salt pork,—excellent potatoes, dry and floury, good shanty-made bread, stewed dried apples, molasses, boiled beans—all served in tin pans, and everybody eating out of a tin pan, and drinking strong tea, with sugar, but no milk, out of another. All is clean but all is rough, while the cook, generally French, in white apron, and striped stockings, makes every one as comfortable as he can.

Starting for Lake Nipissing, we find we must climb on the engine to travel along the line newly built. Passing on a little way, we see terrible evidences of fire. Here for miles, far as the eye can follow, is nothing but the bare upright whitening trunks of great dead pines surrounded by worthless brushwood. The pine is of little use after a fire—the worms attack the trees at once, and destroy them before the lumbermen could attempt to save them. Much valuable timber has been lost here. Arrived at the terminus, which, to save cutting, is seventy feet above the water, the south-east bay of Nipissing, stretching broad between its wooded banks, its surface dotted with islands of picturesque beauty, lies before us—the great expanse of water dark and tossing green below—the evening sun touching island and forest edge with gold above, Here, from the mass of logs, acre-broad, which float far below us, comes a spiked chain running in the bottom of an inclined trough 140 feet long. Towards this the logs are pushed by a pike-pole, they lie on the spikes of the chain, are carried along, and come up one after another, a string of black and wet-looking monsters, reaching from water to summit. Here they will be loaded directly on the cars, and, the five miles of railway past, they can float down the Ottawa.

Descending to the beach, the foreman and myself enter a little green skiff and embark on Lake Nipissing, where, three miles along the shore, we are to see a lumber camp just in process of formation. Neither the oars nor the boat are of artistic formation, but the boatman is powerful, the boat flies across the blue waters, and reaches a beach of white sand covered with stunted poplar and balsam. Here, on a green bank of some height, a space has been cleared, half-a-dozen tents pitched, trunks, luggage and tools lie all around, and the ubiquitous French cook, his big fire and big kettles, are at work as usual *al fresco* in the centre. This stunted bush is rising on the burnt ruins of a once magnificent pine forest. From here to the far distance there is little but *brule*, the poplar undergrowth, the innumerable lofty trunks of dead and worm-eaten pine. (This low poplar, it may be remarked, is of the aspen kind, and the whole yellow landscape of innumerable acres trembles and flutters in the lightest summer air). The fire which swept the country here has, however, spared some thousands of good pine trees in this immediate neighbourhood, and the object of the camp is to secure those which are sufficiently large. We walk a mile to the rear, and watch the process of erecting the lumber shanty. They have erected, of inferior or worm-eaten pine logs, four walls eight feet high, and are now roofing it with what are called scoops—trunks of pine trees flattened and hewn into troughs, a double layer of which, the upper layer inverted to shed the rain into the lower, forms the roof. Six stalwart choppers are cutting the grooves in these, while every now and then along the track into the bush comes a horse at full trot, his driver running by his side, a fresh flatted log of white pine dragging smoothly on the ground behind him.

Opposite the main shanty will be others for stables and stores, and in a few days the men will be in one, the horses, provender and tools in the others, and the winter work of getting out logs will commence in earnest. What is principally noticeable to the forester's eye in the whole operation is the quantity of tree tops and chips left everywhere on the ground where trees have been felled, thrown everywhere to right and left where roads have been cut already, when work is scarce begun. We again take our skiff and return to our railway terminus, as the shadows deepen over Lake Nipissing. Here we see Mr Booth, the brother of the senior partner.

We stay here all night, and in the morning by rail, and boat, return to Callender station. Next day we drive a circuit of some miles round Callender, and find settlers located in pine forests, or so near them that one fire is pointed out as having burnt this summer a length of five miles, broadening so as to include the pine strip in which it was running, but stopping at the hardwood, as is often its manner. Three fires, of which I saw the remains, have occurred in the parts of Mr. Booth's limits supervised by Mr. Cahill this summer. Many thousand dollars' worth have been lost here. Nothing is more pitiful than the aspect of these burnt forests. The pines are spectres—the soil is burnt—all is gone. What is worst is, it goes to obtain so little. The whole farm which is obtained by the burning will seldom give $50 rent a year for many years.

The next stage is to the north shore of lake Nipissing. We stay at Sturgeon Falls, and I see Mr. Mackey, who holds extensive limits here.

At the village of Sturgeon Falls, a small collection of new pine houses rising in all directions among a mass of stumps, surrounded by a low forest of balsam and cedar, the stream falls in a succession of small and picturesque cascades. It is now all cleared land here, but this must, when untouched forest, have looked inexpressibly beautiful. Far removed from the sounds of labour, or even the presence of civilized man, a lofty and secluded forest bordered either bank. It was a place where the Genius of the River might have been fancied descending these white and foaming steps overarched with sylvan green. Now, it is a stream falling over some ridges of rock, with a couple of sandy fields on each side.

In a bark canoe, paddled by a boatman at either end, all day long I go up this stream, passing many a mile of forest, yellow with approaching fall, dropping their overhanging leaves into the waves along which our canoe glides, silently, easily, but so slowly as ever to bring longings for the cedar skiffs of Toronto Bay, their rattling row-locks, the long sweep of their oars, and their treble speed—passing many a clump and stretch of valuable pine, darkening tall against the sky—many a great cliff of overhanging granite, its summit a hundred feet above; its lofty crags disjointed and threatening to fall, but all, firm and loose, covered high with pine, spruce and cedar, growing apparently from rock alone, their roots deep in crevices, their shafts swaying in the fierce winds that sweep along the cliff, but holding tenaciously their place—passing, too, many a long stretch of burned land, where innumerable whitening spectres of former pine trees fill the scene from the river back to the distant horizon—an interminable array of ghastly trunks above, a mass of tangled brush below, red and yellow with the colours of autumn. The roar of rapids is heard ahead, and presently here is a good opportunity of seeing one method by which lumbermen pass these obstructions. Here is a long embankment of high rocks extending diagonally across, over which the river used to plunge at two points close to either bank. Mr. Mackey, on whose limits we now are, has built all along three fourths of this ledge a mass of crib-work of heavy logs, faced against the current with a great sheeting of other logs, smooth and flat, standing on the river bed and leaning against the crib-work. This, which is 200 feet long, closes up one opening, and runs the river, and, of course logs in the driving season, over the other. Over this the whole mass of the Sturgeon river now goes with terrific force. Even yet this fall is divided—one half—that farthest from you as you stand on shore—falling perpendicularly—the other rushing down aslant—a bright green darting mass against the white foam beyond—as if a great sea monster sprang perpetually through an eternal cauldron—both together falling into a boiling gulf, rising and falling into white cataracts again, till it tears its way past the enclosing rocks, and forms again the quiet river below.

Up this cataract somehow we must get, and now we see the superior points of the bark canoe. I walk along the bank past the falls—the two men easily shoulder the boat and follow, and in the calm river above we embark again, and pursue our way up the stream, till, some miles further, we reach the Smoky Falls, so called from the vast mass of vapour which overhangs them. This fall is of unique beauty. Over high rocks, diagonal, as the other, across the river, the level torrent pours, falls in mass on a great projecting shelf not far beneath, and is thrown outward—a giant whirling semicircle of foam, falling full below, still confined by another shelf of granite crossing the river bed, and boiling white and over it to the depths beyond, across which, beneath the sun, a bright rainbow ever glows—the whole accompanied by a volume of sound scarcely imaginable.

Other sounds, however, rise above it as we look—a perfect uproar of yelling and scraping on the hard rocks—and here are a large party of lumberers, as many as can cling on all sides of a forty foot boat and pull it with ropes ahead, dragging it by main force over the portage—here a hundred feet rise and fall of solid rock. One of them hurriedly hands us a letter to post, and away they go, screaming in French, shouting in English, down the mountain side, to embark again for their winter camp high on the banks. Here on this beach lie all the trunks, barrels—conspicuous are monster ones of molasses—tents and blankets, axes and augers—a mass of material ominous to many a grove of giant pine whose branches the north wind, their visitor for two hundred years, shall shortly know no more. But we must retrace our steps. On our way back we examine a lumber camp of last winter. It is reached by a path from the water's edge up a gulley to the level. Here is the scene of square timber "getting out," and it shows but too well how much is wasted. Here lie many great logs of good pine, three feet through, spoiled by deep cuts made to see if the heart is sound, without which it would not answer for squared timber, though quite good for sawing purposes. Here are short ends—nine, eight, seven, and four feet, in multitude, cut off to leave a sound stick, left to rot, though excellent for board, lath and shingle purposes. And here, above all, is such a compound mass of heads of trees, lying with their branches drying in the air, acres of them nearly, strewn through the woods—such piles on piles of chips and rubbish as to leave no doubt of the inflammable nature of lumber *debris*. The lying timber in the untouched forest is not so. We advance into it, near by, where no trees have been cut. What is here is not equally dangerous. All is more or less covered with moss or damp. Ignition would be here difficult—there very easy.

From these notes of the preceding journey, some idea will be had of the scenery and surroundings, among which the lumbermen carry on their hardy trade. It would, however, take years to visit, in the manner sketched, all the lumbering regions of Ontario, which are wide-stretching, and often difficult of access, while the men employed in procuring and sawing the timber form many small armies of no insignificant numbers. It is not uncommon for a lumbering firm to employ from a thousand to fifteen hundred men, and there are many firms. These men will be under the charge of perhaps half-a-dozen foremen, who will each have his district, his depôt for supplies, and his shanties erected at the numerous points where his men are chopping, such as we have seen them some pages back. Winter and summer, throughout immense territories, along a thousand rough-hewn roads, up a thousand streams, supplies are pushing their arduous way to the lumber camps, with, as Horace says, "what toil of men, what sweat of horses," can scarcely be conceived. All winter the axes resound, the pine trees fall at a million different points, and all summer again great argosies of logs float to Quebec to await shipping for Europe; or, stopping at Ottawa, or some inland point, are sawed, distributed through Canada, or sent to the States.

In the tour previously partly sketched, (for of course many places were visited, and many opinions obtained, besides what space would allow to quote) I found that two suggestions seem to have presented themselves to the minds of all who considered the question of preserving our fine forests. First, increasing the number of men employed in summer to watch the forest and prevent fires. Next, the setting apart a portion of territory for forest exclusively.

After placing myself in communication with those best acquainted with the localities, I have obtained the following opinions, which appear unanimous, namely:—That there is but one territory in Ontario south of Lake Nipissing where the last scheme can be carried out, which is a part of the Nipissing District, where there are between twenty and thirty townships with few or no settlers. There are also there valuable pine forests. Speaking also from a forestry point of view, irrespective of the lumbering interest, I should be glad to see this portion kept in forest, as it is one of the chief watersheds of Ontario, and nourishes many streams flowing north, east, south and west, which, of course, are of great value to the cultivated areas through which they flow. Mr. Russell of Pembroke, Crown timber agent for the region, defines it as "Commencing at township No. 2 of Nipissing—Elora, Maria, Head, Rolph, Wylie and McKay in Renfrew, extending west to townships Laurier, Paxton. Butt, Hunter and Peck, inclusive." If settlement at any bordering point has made progress, which cannot be to any great extent, the reserving line could be drawn to suit it. Much of the region is unfit for agriculture, but would be very valuable if kept in forest.

It appears to me that throughout the whole country visited, as well as, from report, many parts adjacent, settlers are too apt to locate themselves on soil unfit to be of lasting value for agricultural purposes. It is evident that if this could be checked by directing these men to better and separate localities, it would tend greatly to reduce the number of forest fires, for settlement necessitates the use of fire in clearing, and, especially when at all carelessly managed, the fire is too likely to get beyond control, and spread far into valuable timber. Such men as were retained in summer to watch fires could, I should think, in certain localities, being themselves well acquainted with the country, direct settlers to proper sections, and act in conjunction with the Crown Land agent in charge It has been suggested, also, that if settlers who set out fire were obliged to give their neighbours notice, proof could then always be obtained as to whether it was done carefully or not. The general opinion is that lumbermen, settlers and sportsman are alike too often careless in the use of fire, and that some measure should be taken to enforce the provision of the Fire Act by all. This, and the suggestion concerning a reservation of land in the Nipissing District, are the two measures I consider needed, as far as the country south of Lake Nipissing is concerned. It is important that some steps should be taken in the matter, as the loss by fire is very large.

Forest Reservations in Quebec.

The Hon. W. W. Lynch, Crown Lands Commissioner, Quebec, states in his report of last year, speaking of the forests:—"So important a source of revenue cannot receive too much of our attention; and the means which should be adopted, in order to prolong its existence to an indefinite period, ought to be the subject of our most serious consideration. Our forests have not to be created; they have only to be preserved; and if they can be but protected from the disastrous fires by which they are so often devastated, the present rate of production, with judicious management, may be continued without any danger of their becoming exhausted. By a series of untoward circumstances, I have hitherto been prevented from availing myself of the means placed at my disposal by the Legislature to establish a more efficacious system than that now in use for preventing the spread of fires through the forest. I anticipated receiving the unanimous co-operation and aid of holders of timber limits and all who are interested in the working of our forests. Very few of these have responded to my appeal; and I have been obliged to postpone to a more favourable opportunity the execution of the project which I had conceived. It has, however, been possible for me to take some steps towards the attainments of this object, though indirectly, by giving effect, in the most richly wooded districts in the Province, to the provisions of the Act, 46 Vic., cap. 9, concerning forest reserves. By the Order-in-Council some months ago, the unsurveyed portions of the St. Maurice and Upper and Lower Ottawa agencies, with some of the subdivided lands in the same agencies, and the rear townships of the counties of Compton, Beauce and Dorchester were included in the limits of forest reserves specially described and defined. In order that the progress of colonization may not be interfered with, wherever it is desirable and expedient that it should advance, I have had an inspection made of every lot remaining unsold, or sold but not patented, in most of the townships comprised within these reserves. With the information thus procured, and revised in the department, the local agents will be in a position to dispose of the public lands to good effect. The real interests of colonization will thus be protected, while it will become possible to prevent abuses and check the waste of timber which has been going on without profit to the State.

The following Act has reference to these reserves :—

An Act to further amend chapter 23 of the Consolidated Statutes of Canada, respecting the Sale and Management of Timber on Public Lands, and the Act amending the same.

Her Majesty, by and with the advice and consent of the Legislature of Quebec, enacts as follows :—

1. The Act of this Province, 39 Vic., cap. 11, is amended, by adding at the end thereof the following sections, which shall be taken and construed as forming part of the said Act :—

"(5) The Lieutenant-Governor in Council may, as soon as the necessary information can be obtained, after the coming into force of this Act, set apart as : "Forest land," all the ungranted lands of the Crown now held under licenses to cut timber," except such parts of such licensed lands on which no merchantable pine or spruce timber grows and which are fit for settlement, and also such other portions of the ungranted lands of the Crown as the Lieutenant-Governor in Council, on the recommendation of the Commissioner of Crown Lands, may think fit so to set apart; and as soon as the order or orders-in-council setting apart such forest land shall be published in the "Quebec Official Gazette" and from and after the date of such publication, no land included in the territory so set apart shall be sold or appropriated for settlement purposes, until after the expiration of at least ten years, and not then until after it is established to the satisfaction of the Lieutenant-Governor in Council that the whole or any portion of such territory may with advantage be opened for settlement. The order or orders in Council withdrawing such territory shall likewise be published in the "Quebec Official Gazette." The land so set apart shall be known and designated as 'Forest reserve.'

"(6) In the renewals of licenses effected after the publication of an Order-in-Council creating a forest reserve, it shall be the duty of the Commissioner of Crown Lands to exclude any land theretofore under license in the locality, and which is not included in the reserve."

"2. Whenever any such lands cease to form part of a "Forest reserve," and for the purpose of securing to settlers who may thereafter occupy the same, the timber they may require, to facilitate the performance of their settlement duties, section 2 of the said chapter 23 of the Consolidated Statutes of Canada, is amended, by adding after the words: "in all," in the sixth line thereof, the following words : "red and white pine, spruce, tamarac, birch, oak, walnut, cedar, butternut, and basswood."

"3. After the coming into force of this Act any license issued for the cutting of any timber under the authority of the said chapter 23 of the Consolidated Statutes of Canada and its amendments shall contain a special description of the trees, timbers and lumber, which it is permitted to cut thereunder, and they shall be of the kind mentioned in the preceding section and none others."

"4. This Act shall come into force on the day of its sanction."

It may be mentioned that the reserve set aside under the Act quoted above, and mention of the Crown Land Commissioner, Quebec, are of very large extent, containing many thousand square miles.

Forest Reservation by the Dominion Government.

The Dominion Lands Acts was, last session, at Ottawa, amended thus :—

"The Governor-in-Council may, from time to time, for the preservation of forest trees on the slopes and crests of the Rocky Mountains, and for the proper maintenance throughout the year of the volume of waters in the rivers and streams which have their sources in such mountains and traverse the North-West territories, reserve from sale, lease, or license, such portions of the land in the North-West territories on, adjacent to, or in the vicinity of the Rocky Mountains, as to him appears expedient as to reserve, and may define the limits or boundaries of such reserves, and may set aside and appropriate such land for a forest park, or forest parks, as he deems expedient, and may appoint officers for the preservations of such reserves or forest parks."

The following clauses states that cutting of any tree or surplus in such reserves is punishable by fine from $10 to $100 and costs, or punishment of not more than three months.

Forest Reservation in the United States.

To mention what is being done in forest reservation in the States, a bill passed the Senate last year, at Washington, setting apart nearly eight thousand square miles of land in the territory of Montana, choosing the highest ground and the head-waters of various rivers for the purpose. The bill is expected to pass the lower House this session.

In 1883, the State of New York, finding the head-waters of various rivers, notably the Hudson, rapidly decreasing in volume by the clearing of the woods near their sources, passed an Act forbidding the sale of any land owned by the State in the counties of St. Lawrence, Franklin, Clinton, Essex, Warren, Washington, Saratoga, Fulton, Montgomery, Hamilton, and Lewis, in which the State owned one-half the land, or 750,000 acres.

Forestry in the United States.

Throughout the United States, greatly encouraged by the efforts of the Central Forestry Department at Washington, many attempts are being made to check the tide of deforesting, and to educate the masses to an appreciation of its true bearing on their interests. This is generally attempted by the free circulation of forestry literature in pamphlet form, either directly by the State Legislatures, or through forestry or agricultural associations, which receive State appropriations for that purpose, or even, in a few cases, to private efforts. These pamphlets are issued sometimes, like the present, under the name of reports, sometimes under that of forestry manuals. I have received lately valuable publications of these classes from Ohio, Minnesota, Kansas, Colorado, Illinois, Iowa, Massachusetts, Vermont, and other States. These efforts are not without result wherever exerted. In Kansas hundreds of thousands of acres have been planted with trees, while from most of the States above mentioned encouraging accounts are received. The forestry agitation of late years has not made its appearance before needed. Passing through the older States of the Union, from the great lakes to the southern line, one may travel for days through lands, formerly covered with splendid forests, now so completely cleared that the forest denudation is evidently commencing to tell on the fertility of the soil, as it has in every region where the ever fatal experiment has been tried

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