nount of oil,

The minimum amount of odor and taste,

The oil well emulsified and the emulsion

The recent deplorable attempts to make the profession believe that a fractional amount of one per cent. of iodine, bromine, and other so-called "alkaloids" of cod-liver oil represents all the medical virtues of the whole oil is well answered by John T. Winter, M.D., Professor of the Principles and Practice of Medicine in the National University of Washington, D.C. Dr. Winter says:

"It must be laid down as a rule, founded upon scientific study and verified by scores of years of observation, upon hundreds of thousands of cases, that the whole oil must be used if the best therapeutic results are desired."

Official Guide
and Souvenir

British Medical Association

Sixty-Fifth
Annual Meeting

Montreal
1897...

DESBARATS & CO.
ENGRAVERS, PRINTERS AND PUBLISHERS
73 ST. JAMES STREET
MONTREAL

The Introduction.

THIS small book is intended as a guide and souvenir for those attending the Sixty-Fifth Annual Meeting of the British Medical Association held in Montreal from August 31st to September 4th, 1897. The first meeting was held in Bristol, in 1833. This great organization had its origin in "The Provincial Medical and Surgical Association." To it other medical societies united themselves, and year by year new branches were formed, subordinate to the parent institution, till to-day the Association numbers over seventeen thousand members. In 1872, a new *régime* began upon a wide and firm foundation which still exists. Since 1879, the journal has been printed by the Association itself, though it has been under the present effectual editorship since 1867. The journal and the Association together constitute to-day the most powerful body of medical opinion now existing.

The extension of the Association to the colonies was largely promoted by a visit undertaken by Mr. Ernest Hart. In Canada, branches grew up behind him in Vancouver, Winnipeg, Toronto, and Montreal. This meeting has prompted the establishment of new branches and stimulated those which were already formed. There was already in this country a fairly firm organization of the profession by local

medical societies, provincial, maritime and Canadian associations. The present meeting however has served to draw them closer together, and all have worked in harmony to the one end. Therefore it has had a wide, strong and good influence apart from its effect upon the Association itself.

This is the first occasion on which the meeting has been held out of the United Kingdom. The great Metropolitan gathering was held in 1895, and in December of that year an invitation to meet in Montreal was extended by cable. But the Border Counties Branch had secured the prize, and the meeting of 1896 was held in Carlisle. The invitation was renewed, and the meeting now in progress is the outcome of it.

The British Medical Association.

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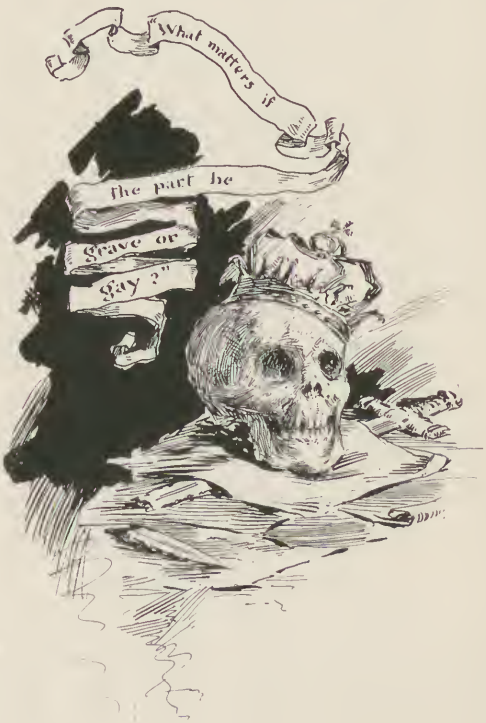

OF CANADA.

THE POLITICAL ORGANIZATION.

Canada as a political community dates from July 1st, 1867. Upon that day the British North America Act came into force by royal proclamation. This imperial act was passed upon petition of the two colonies known as Upper and Lower Canada, otherwise Ontario and Quebec, and of Nova Scotia and New Brunswick. In the next six years, the remaining provinces of Prince Edward Island and British Columbia joined the Federation, along with Manitoba, a new province created out of the vast North West Territory. The remainder of this region was acquired by purchase of the rights of the Hudson's Bay Company, and is now divided into five districts for purposes of government.

This act now forms the fundamental law for all the British possessions in North America, save Newfoundland alone—is in short the "Constitution," and can only be altered by decree of the Imperial Parliament.

The government of Canada therefore is vested in :

1. The Sovereign, in whose name all executive authority is exercised—Parliament called together and dissolved, bills assented to or reserved. The

Queen is represented by the Governor-General appointed by Her Majesty in Council, and holding office during pleasure, responsible as an imperial officer but exercising all authority under the advice of a responsible ministry. On occasion, the Governor-General has refused the advice of his ministry when he believed they did not possess the confidence of the people.

2. A Ministry of thirteen to fifteen members having seats in either House of Parliament, possessing the numerical support of the Lower House and responsible for all legislation and administration.

3. A Senate composed of seventy-eight members appointed by the Crown for life, holding powers of legislation coordinate with the Lower House, excepting in respect of initiating or amending money or tax bills. The position of senators is somewhat anomalous since their number can not be varied by the House of Commons, excepting by the addition of six members, and an incoming ministry is apt to find a senate of the same political complexion as the ministry it has succeeded.

4. A House of Commons composed of two hundred and fifteen members elected for five years upon a suffrage practically universal, having the same privileges and powers as the English House of Commons when these are defined by law. The number of representatives allowed to each province is redistributed after decennial census, Quebec always having sixty-five.

5. A Dominion Judiciary, consisting of a Supreme Court of six judges, of whom one is chief justice. This body acts as a court of appeal for all provincial courts, and appeal may again be had from its decision to the judicial committee of the Queen's Privy Council in England.

The government of the various provinces is vested in :

1. A Lieutenant-Governor, appointed by Governor-General in Council, and executing the usual functions of the head of a responsible executive.

2. An Executive Council, analogous with a ministry and conducting the business in accordance with the usual conventions.

PARLIAMENT BUILDINGS, OTTAWA.

3. A Legislature, composed, in some provinces of two Houses and in others of a House of Assembly alone. The legislators are appointed for a period varying in different provinces and under different suffrages.

4. A Judiciary, appointed by the Governor-General in Council and removable only by the Dominion Parliament.

The distribution of powers between the Dominion and Provincial authorities is dealt with in

sections 91-95 of the Act. It clearly sets forth the powers vested in the Dominion Government alone, the powers vested in the provinces alone, the powers exercised by the Dominion Government and the provinces concurrently and the powers given to the Dominion Government in general terms.

The safeguard of the union consists in this: the residium of authority remains with the central government of the Dominion. In the words of the Act "such classes of subjects as are expressly excepted in the enumeration of the subjects assigned exclusively to the legislatures of the provinces," are retained within the authority of the Dominion Parliament. In the United States it rests with each member of the confederacy, and the pretext for the great Rebellion was the establishment of this doctrine of States Rights. When the Dominion of Canada was founded the provinces resigned every vestige of their authority into the hands of the Imperial Government, which in turn redistributed it to the various elements making up the Confederation. This distribution is embodied in the Constitution and forever defines the status of each province. The bond of union is strong but at the same time it is comfortably loose. The central government retains control of the regulation of trade and commerce, the borrowing of money on public credit, the public debt and property, the postal, military and census services, all matters pertaining to marine and fisheries, currency and coinage, financial and banking regulations, patents, copyrights, weights and measures, naturalization, marriage and divorce, criminal law and procedure.

On the other hand the Provincial legislatures have exclusive jurisdiction over the constitution of

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their own provinces, direct taxation, the borrowing of money upon their own credit, the management of their own lands and the payment of their officers, the maintenance of prisons, asylums and hospitals for the province, the administration of justice and enforcement of penalties in relation to any law the province is competent to enact.

It is also provided that the Provincial legislatures may legislate on the subject of education, but it is reserved to the Dominion Parliament to take measures in case of infringement of any legal rights enjoyed by any minority at the time of the Confederation. This was intended to safeguard the school systems of the Protestants and Catholics in any province in which they might be in a majority. Out of this arose the famous Manitoba school question, the gravest issue which ever arose between the provinces and the Dominion, and which was recently settled upon a basis agreeable to all reasonable men.

Canada is practically free to exercise the functions of Independent Government, and the ties which bind it most strongly to the Mother Country are the ties of mutual interest and a loyalty independent of material consideration.

Canada cannot directly negotiate treaties with a foreign power. The Imperial Government retains control of peace and war, of the appointment of the Governor-General, and may disallow legislation directly in opposition to its own policy in so far as it touches foreign States: it is only by its authority that amendment may be made to that instrument known as the British North America Act. Finally the Judicial Committee of the Privy Council is the last court of resort for Canada as well as for all the Empire.

Notwithstanding all the care expended upon the framing of the Constitution, questions of jurisdiction are continually coming up, to be settled by the Judiciary. Most of these are submitted in a friendly spirit for the sake of defining individual rights and duties. Among these questions are: the determining of Provincial boundaries, the appointment of Queen's Council, and legislation concerning the prohibition of the sale of alcohol.

THE PEOPLE.

There have been but three decennial census taken in Canada, the result of each being:

1871	3,695,024
1881	4,324,810
1891	4,833,239

The increase for the second period was 18.97 per cent.; for the last period 11.76 per cent.

There are nineteen cities in Canada, containing over ten thousand inhabitants. The urban population in relation to the whole was for the three periods 18.8, 21.1, and 28.77 per cent. respectively.

The French Canadian population is 1,404,974, or 29 per cent. of the whole. In 1881, it was 29.9 per cent. of the whole population. The density of population in Canada is 1.5, in Prince Edward, the most thickly peopled 54.5, in Quebec 6.5.

The birth rate of Canada was 28.3 per thousand. The death rate 14.10 for ten years 1881-1891, practically the same as for the city of London. The death rate of children under one year, in relation to total births, was in Quebec 18.80; for the whole of Canada, 11.6. This is less than the rate in Eng-

land, Germany, Holland, Italy, Switzerland, France, Belgium, and Denmark. The death rate from smallpox in Canada, in 1891, was 0.20 per ten thousand living, England being 0.67. Scarlet fever 1.14, England 5.29. Diphteria 9.36, England 3.05. The death rate under five years of age, per thousand living at that age, was: Canada 46.73, England 63.6, United States 58.8, France 75.6, Austria 111.7, Italy 110.6, Spain 106.2. The pro-

PROVINCIAL PARLIAMENT BUILDINGS, TORONTO.

portion of insane per ten thousand living was, in 1891, in Canada 28, England 32, Scotland 32, Ireland 37, France 35, Germany 34, United States 33.

The number of inhabited houses is given 855.535, of which 81 per cent. were built of wood, 15 per cent. of brick and 3 per cent. of stone. The character of the houses may be inferred from the fact that 3 per cent. consisted of one room, 8 per cent. of two rooms, 11 per cent. of three rooms, 16 per cent. of four rooms, 12 per cent. of five rooms, and 43 per cent. from six to ten rooms.

The Protestant religion prevails in Canada to the extent of 56.8 per cent., and numbers 2,745,453 adherents. The Catholics number 1,992,017, or 41.21 per cent. of the whole population.

The Church of England in Canada has 23 per cent. of the Protestant community. The first general synod of the entire Church in Canada was held in September, 1893. The Upper House is composed of two archbishops and eighteen bishops. The clergy number over 1,200.

The Presbyterian Church has 755.326 adherents in Canada, being 28 per cent. of the Protestant population. The Presbyterian body is in many respects the most influential in Montreal from the fact that so many of the well-to-do residents are of Scotch descent. In 1876, most of the churches of all the different kinds of Presbyterianism united into one body, as the Presbyterian Church in Canada, exercising complete control over its own government. Several churches however refused to come in, and still exist in concurrence with the Church of Scotland. They maintain two synods, four presbyteries and eighteen churches. In Montreal, St. Andrew's church alone adhered to the "Old Kirk." The Presbyterian Church in Canada has over a thousand churches. It maintains four theological colleges: Montreal, Queen's College, Kingston, Knox College, Toronto, Halifax, and Manitoba College, Winnipeg.

The Methodist body in Canada has 849,965 adherents, or 31 per cent. of the Protestant population, with nine conferences and 1,800 ministers.

The Congregational Church has 28,157 members, or one per cent. of the Protestant population in Canada, with two unions of 100 ministers.

The Baptists Church has in connection with 302,526 members, or 11 per cent. of the Protestant population, two conventions and 500 ministers.

THE RESOURCES OF CANADA.

It would be quite easy, but also quite useless, to set forth an array of figures indicating the extent and resources of Canada. A region cannot be dealt with in this way, which extends from the latitude of the Dardanells to the Polar region, and from the Atlantic to the Pacific oceans, a region including more than one half of the North American Continent, a country in which the vegetation ranges from grapes to reindeer moss.

The following statement will however afford some vague notion of the export trade that is carried on :

	1896.	1897.
Minerals	$ 8,401,760	$11,563,359
Fish	11,183,698	10,629,328
Animals and products	37,404,396	40,290,584
Forest	27,324,894	31,500,063
Agricultural	17,974,011	25,809,504
Manufactures	10,222,877	10,169,167
Miscellaneous	473,854	673,034
Coin and bullion	4,699,309	3,478,940
Total exports	$117,684,799	$134,113,979
Produce of Canada	$106,586,284	$120,156,771

This is nearly seventeen million dollars larger than any figures hitherto recorded in the history of Canada.

The value of exports of farm produce was higher than the average for twenty years, which was $23,600,000. A comparison of exports for five years is as follows :

1893	$115,564,000
1894	114,524,000
1895	110,638,000
1896	117,684,000
1897	134,113,000

The imports, $111,380,777, are divided as follows:—Dutiable, $66,242,150, as against $67,250,775 in 1896; free, $45,138,627, as against $43,143,226 in 1896. The average rate of duty in 1896 was 18.28, and in 1897, 17.3.

The total trade was, in 1897, $245,494,756, compared with $225,272,000 in 1896, a gain for the year just closed of $20,000,000.

Montreal, though six hundred miles from the sea, is a seaport town with a 27½ foot channel; the volume of its shipping last year was 1,212,303 tons, and the number of steamers which loaded at its docks was 669, besides 40 sailing craft. These steamers carried 17,000,000 bushels of grain and 2,000,000 boxes of cheese.

Last year, 100,360 cattle, valued at $8,000,000, were exported. The loss in transport was less than one per cent. From the United States, it was 2.3 per cent., and from Australia 5.3.

PROVINCIAL PARLIAMENT BUILDINGS, QUEBEC.

OF MONTREAL.

Montreal is seated upon an island in the St. Lawrence, forty miles long and seven broad, connected with the main land by half a dozen bridges, two of which are over a mile in length.

Montreal was not founded without voices and visions, and dreams and signs. Its inception is shrouded in mysticism; there was Dauversière who whipped himself with a scourge of small chains; there was Olier, who afterwards founded the Sulpician Seminary, to whom came a revelation as the choir was chanting *Lumen ad revelationem gentium*. These two men were miraculously brought together in the church of Notre-Dame-de-Paris, to whom in an ecstasy the Virgin appeared. All these things are set forth in the *Relations des Jésuites*.

The proposal was to found at Montreal three communities, one of secular priests, to direct the colonists and convert the Indians; one of nuns, to nurse the sick; and one of nuns, to teach the Faith to children, white and red alike. And all this was at a time when, from the condition of Indian warfare, it was like entering a kennel of wolves. The captain soldier of the expedition of forty men was Paul de Chomedy, Sieur de Maisonneuve, a valiant

and sober man of grave demeanor and full of courage; accompanying the expedition was the devoted Jeanne Mance. Arriving at Quebec, they encountered only jealousy and distrust. It was then the leader cried, "I have not come to deliberate but to act; it is my duty and my honour to found a colony at Montreal, and I would go if every tree were an Iroquois." Upon the 17th of May, 1642, this strange expedition arrived at the foot of St. Mary's current, encompassed with illusions and shadows, and watched over by angels and devils. Maisonneuve sprang ashore on the spot where the Custom House now stands. In the words of the officiating priest, Père Vimont, "Tents were pitched, camp-fires were lighted, evening fell and mass was held. Fireflies caught and imprisoned in a phial upon the altar served as lights." An altar was raised, and kneeling together they heard the voice of the priest, "You are a grain of mustard seed that shall rise and grow till its branches overshadow the earth. You are few, but your work is the work of God. His smile is upon you, and your children will fill the land."

To trace the growth and trials of the colony would be to write a real history and the romance of Christian chivalry.

Their dreams are realized to-day in the city of Montreal, the Seminary of St. Sulpice, the Hôtel-Dieu, and the schools of the Congregation of Notre-Dame.

A century before, in 1635, Jacques Cartier landed on this island and followed an Indian path through the forest, to the site of Montreal. "And we, being on the road, found it as beaten as it was possible to see, in the most beautiful soil and the fairest plain; oaks as fair as there are any in forests

DE MAISONNEUVE MONUMENT, PLACE D'ARMES, MONTREAL.

of France, under which all the ground was covered with acorns . . . And about a league thence, we commenced to find the lands tilled, and fair large fields full of the corn of their lands, which is like Brazil rice, as large, or more, than peas; whereof they live as we do on wheat.

"And in the midst of these fields is situated and fixed the said town of Hochelaga, near and joining a mountain which is in the neighbourhood, well tilled and exceeding fertile: therefrom one sees very far. We named that mountain Mont Royal."

When Maisonneuve arrived, all trace of this town had vanished, leaving only obscure legends of a Huron Helen and the evil that was brought by her.

A tablet, in Metcalf street, near Sherbrooke, marks its probable site.

The next European to visit the spot was Samuel de Champlain in 1611. He landed at a place he called Place Royale, a name it still bears. He found, "in the middle of the river an island about three-quarters of a league in circuit, fit for the building of a good and strong town, and I named it the Isle of Saincte Heleine. The rapids come down into a sort of lake, where there are two or three islands and fine meadow-lands."

Montreal was abandoned by the French the year after Quebec fell and has ever since remained in peaceable possession of the British Crown, excepting when it was temporarily occupied by the Americans in 1775.

One who has a taste for old things may wander about the city, at will, and gratify his mind by the remembrance of other days in reading the tablets erected by the Antiquarian Society. These tablets are some ninety in number and indicate the chief

events in the history of Montreal, from the earliest times. For example, one reads on a tablet affixed to the Bank of Montreal: "The Stone Fortifications of Ville-Marie extended from Dalhousie square through this site to McGill street, thence south to Commissioners street, and along the latter to the before-mentioned square. Begun 1721 by Chaussegros de Léry. Demolished 1817." Upon the Seminary, across the square: "The Seminary

OLD SEMINARY GATE AND CLOCK, MONTREAL.

of St. Sulpice, founded at Paris, by Monsieur Jean Jacques Olier, 1641; established at Ville-Marie, 1657, Monsieur Gabriel de Queylus, Superior." On the north corner of St. Sulpice and St. Paul streets: "Here was the first Parish Church of Ville-Marie, erected in 1656." On the Imperial Building: "Near this square, afterwards named La Place d'Armes, the founders of Ville-Marie first encountered the Iroquois, whom they defeated, Chomedy de Maisonneuve killing the Chief with his own hands, 30th March, 1644." On the Châ-

teau de Ramezay: "Built about 1705 by Claude de Ramesay, Governor of Montreal, 1703; headquarters of La Compagnie des Indes, 1745; official residence of the British Governors after the Conquest; headquarters of the American Army, 1775; of the Special Council, 1837." Another upon the same building: "In 1775 this Château was the headquarters of the American Brigadier-General Wooster, and here in 1776, under General Benedict Arnold, the Commissioners of Congress, Benjamin Franklin, Samuel Chase, and Charles Carroll of Carolton, held council."

PUBLIC PLACES.

The glory of Montreal is its mountain, though the unthinking call it a hill. It is only seven hundred feet in height, and covers an area of four hundred and thirty acres. It was acquired by the City from private owners in 1874, and since that time the energy expended on it has been chiefly in the direction of preventing inroads upon it by private corporations, and not altogether with success. It has fairly well resisted all efforts at improvement since it was laid out by Mr. Frederick Law Olmstead, the same who so successfully dealt with Central Park in New York. In a little book upon the subject, he reveals his plan for the development of the property: namely, to follow along the lines which nature had already laid down, and bring to light its half hidden but characteristic beauties. This he has succeeded admirably in doing. Even his names are suggestive and artistic, though they have long ago fallen into disuse, if indeed they ever were commonly known.

The most characteristic approach is by University street, along Pine Avenue, past the Royal

Victoria Hospital, and thence, by an easy and graceful serpentine driveway, to the Upper Reservoir at Cragsfoot.

The ascent is continued westward through the forest or Underfell, through the cliffs, and at the western end one sees at the left, rolling grassy slopes known as the Glades, and on the right, a pine covered knoll which, from the abundant growth of ferns, is termed the Brackenfell. By this cir-

MOUNT ROYAL PARK DRIVE, MONTREAL.

cuitous route the summit, or Upperfell, is reached, and from Piedmont in the north, one may look out toward St. Jean-Baptiste village over the level plain of Côte Placide. This wide expanse is known as Fletcher's Field, over which, for twenty-three years, the members of the Royal Montreal Golf Club teed and drove and putted until its very stones were dear to them.

From these various elevations, views are seen which each one may fit with words according to his

desire. Away to the westward, the valley of the Ottawa opens out, and the river itself, splitting upon the Island of Montreal, sends its waters upon either side to mingle with the St. Lawrence. Lake St. Louis is spread out like a sea, and the Lachine Canal gleams like a ribbon of silver, and, upon occasion, one may see the leap and sparkle of the Rapids.

Looking to the south across the river, a level plain is seen with scattered villages and pointed peaks, Laprairie at the extreme right and Varennes on the left.

The mountains rise from the level like miniature Fusi-Yamas, being in order from the west, Monnoir, Shefford, Rougemont, Yamaska, Belœil and Montarville. Away in the distance, dimly outlined are the Green Mountains of Vermont, and the Adirondacks of New York. Towards the north and west at some little distance there is a conical peak, and in the hollow and slopes between it and Mount Royal is the resting place of the dead, Catholics and Protestants, religiously divided even in death.

Ascending the farther hill by a toilsome path is the Way of the Cross, with shrines at regular intervals for contemplation of the events which once transpired on some such way as this. Upon the summit, one beholds three crosses bearing their burdens allegorical of the central fact in the doctrines of the Church. Upon the first day of the week, pilgrimages of men and women, led by their gowned priests, "make the way," stopping at the shrines for admonition and prayer, and as they toil upward, one may hear from afar the confused murmur of chanting

> Stabat Mater dolorosa,
> Juxta Crucem lacrymosa,
> Dum pendebat Filius.

Place d'Armes is a small enclosure surrounded by several noble buildings. The parish church of Notre-Dame, with the Seminary of the Sulpicians, occupies the southern side. The Bank of Montreal with its classic front faces the church, and upon either hand are large buildings for commercial purposes. The most notable feature of the Place d'Armes is the statue erected in honour of Sieur Chomedy de Maisonneuve, the founder of Montreal. He is represented in bronze, in the costume of the 17th century, holding a fleur-de-lys banner. The granite pedestal shows the inscription : "Paul de Chomedy de Maisonneuve, Fondateur de Montréal, 1642." It rests upon a fountain, and displays bas-reliefs representing : Maisonneuve killing the Indian chief, the founding of Ville-Marie, the death of Lambert Closse, defending his enclosure near St. Lambert Hill ; the heroic death of Dollard, who fell with his companions at the Long-Sault of the Ottawa, and saved the colony. At the four corners are life-size bronze figures, representing an Indian, a colonist, with the legendary dog Pilote, a soldier and Jeanne Mance, all finely done under the direction of P. Hébert.

Jacques Cartier Square fronts the river and is adorned with a column and statue of Lord Nelson, erected in 1808. It is now fallen into decay, but a project is afoot for its restoration. Into this square the traffic from Bonsecours market overflows, and it has lost all the dignity of a public place. At the head of this square, Frontenac burned four Iroquois in 1696, with good success.

Victoria Square is in the centre of the city, at the foot of Beaver Hall Hill, and contains a good bronze statue of Queen Victoria, of colossal proportions, by Marshall Wood.

Dominion Square occupies the site of the old cemetery, and traces of its original function are continually coming to light though many of the bodies were removed in an emblematic way. The Square is a pleasant place, and acquires dignity

VICTORIA SQUARE, MONTREAL.

from the buildings on either side: the Canadian Pacific Depot, the Windsor Hotel, and on the other side Cathedral of St. James. Here have been erected the ice palaces when Carnival was king. Near the centre of the Square is a structure, and within it, upon examination, one may find a figure in bronze of the late Sir John A. Macdonald. The figure itself is of commanding proportions with a reasonable degree of harmony in its parts, but the canopy, with its obscure or meaningless adornments and trifling decorations, disguises the value of the figure. The edifice is flanked by two guns acquired from the Russians at Sebastopol.


CITY OF MONTREAL
Desbarats & Co., Engravers & Printers, Montreal.
Royal Victoria Hospital
Hotel Dieu.
Reservoir
McGill University
Windsor Hotel and Hall.
Turkish Bath Hotel.
Academy of Music
Queen's Hall
Christ Church Cathedral
Y.M.C.A.
St. James R.C. Cathedral
Art Gallery
St. James Methodist Church
Church of the Gesu
St. Patrick's Church
Canadian Pacific Ry. Windsor St. Depot
Queen's Hotel
Grand Trunk Ry. Depot
Balmoral Hotel
St. Lawrence Hall
Theatre Royal
Post Office
Drill Shed
Montreal General Hospital.
Laval University.
St. James Church
Notre Dame Hospital.
Notre Dame Church
Court House
City Hall
Custom House
Champs de Mars
Viger Square
St. Louis Square
Dalhousie Sq. Depot
Island Wharf
King's Basin
Quebec Boat
Steamboat Landing
Queen's Basin
Military Basin
Victoria Pier
Grey Nunnery
Lachine Canal
Basin No. 1
Basin No. 2
Basin No. 3
Basin No. 4
Flour Basin
Old Basin
New Basin
Lock
½ MILE
1 MILE
1½ MILES
PINE AVE.
SHERBROOKE ST.
ST. CATHERINE ST.
DORCHESTER ST.
CRAIG ST.
ST. JAMES ST.
NOTRE DAME ST.
ST. PAUL ST.
COMMISSIONERS ST.
WELLINGTON
COMMON ST.
ONTARIO
MIGNON
LAGAUCHETIERE
PARK AVE.
ST. LAWRENCE
ST. DENIS
BLEURY
UNIVERSITY
MOUNTAIN
DRUMMOND
STANLEY
PEEL
GUY
OTTAWA
WILLIAM
C.P. RY.

St. Helen's Island, at the foot of the current, is a small island called by the name of Helen, wife of Champlain, the first European woman to visit Canada. The English government acquired it from the Barons of Longueuil for a military depot and station. There is yet upon the Island a battery of guns and barracks. The place is prettily wooded, and at times many secluded spots are to be found. It well warrants a visit, and is easily reached by steamer from Jacques Cartier Square.

THE CHURCHES.

Montreal is so well provided with churches that a visitor of curious wit remarked, a boy could not throw a brick without breaking a sacred window.

The Cathedral of St. James has an imposing situation upon Dominion Square. It is erroneously called the Cathedral of St. Peter, because it is a reproduction of St. Peter's at Rome, modified to suit the exigencies of the Canadian climate. For

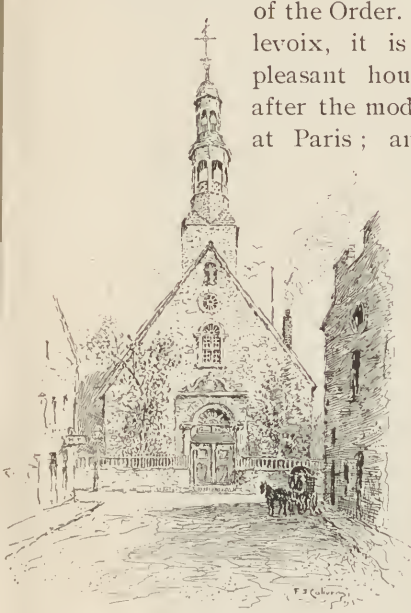
DOMINION SQUARE, MONTREAL.

example, the roof is sloping to throw off the snow. This noble edifice was projected by the late Archbishop Bourget in 1852, when his church and palace on St. Denis street were consumed in the great fire of that year. The work was commenced in 1868, and is yet unfinished. Apart from the plan, the exterior is hard and gloomy in appearance. The dome is a noble adornment and a salient feature in the architecture of Montreal. Its height with the cross is two hundred and fifty feet, and its diameter ninety feet. The facade and portico are unfinished. The plan is cruciform, after the manner of its prototype, the tribune and ends of the transept being rounded. The total length is three hundred and thirty feet, the breadth at the transept two hundred and twenty-five feet, the height to the roof tree eighty feet. The interior when finished will be upon the model of the Italian churches. The large brick structure adjoining it, is the palace of Archbishop Bruchesi.

The parish Church of Notre-Dame faces the Place d'Armes. It is a plain, stately edifice of a late Gothic style, built of grey stone, in 1824, by James O'Donnell. The present site was occupied by a church built in 1672, a long low structure with a pointed roof. Notre-Dame is one of the largest churches in America, being two hundred and fifty-five feet long and one hundred and thirty-four feet wide, and capable of containing fifteen thousand persons. There are two towers two hundred and twenty-seven feet high, provided with an elevator, and from the summit a notable view may be obtained. They contain a chime of ten bells which are rung upon special occasions. There are three others, one, "le Gros Bourdon," the largest bell in America, weighing fifteen tons. The interior is

florid and tasteless in its decoration, but the wood carving is good. The organ was built at St. Hyacinthe in 1890. Behind the choir is the richly adorned "Lady Chapel."

Adjoining the Church is the Seminary of St. Sulpice, erected in 1710 and now used for the offices of the Order. As in the days of Charlevoix, it is "a stately, great and pleasant house, built of free-stone, after the model of that of St. Sulpice at Paris; and the altar stands by itself, just like that at Paris."



BONSECOURS CHURCH, MONTREAL.

Notre-Dame-de-Lourdes, on St. Catherine street, is the only church in Canada in which all the interior decoration is meant to illustrate one central idea, in this case the dogma of the Immaculate Conception. M. Bourassa, the artist, was stimulated to this effect by the declaration, in 1854, of Pius IX., that this dogma was of faith. The style of architecture is Byzantine and Renaissance, in harmonious proportions, and within and without the effect is one of unity and force.

Notre-Dame-de-Bonsecours dates from 1673, when it was founded by Marguerite Bourgeois. The present edifice dates from 1771, and several times was in danger of being swept away by the tide of commerce at its base. It has been sorely mishandled by the renovator.

The Church of the Gesu, on Bleury street, with St. Mary's College adjoining, is the abode of the Jesuits. They returned to Canada in 1847, and erected the present church in 1864. Members of this order were the first to establish missions in Canada and an account of their trials affords the most romantic reading of history. Individual priests penetrated the wilderness and lived and died often in hideous torment amongst the savages of the Iroquois confederacy. At the time of the conquest, they were expelled from Canada, and their estates confiscated. Up to five years ago, their revenues were devoted to educational purposes when, under arrangement, their estates were restored to the order. The church is one hundred and ninety-four feet long, ninety-six feet wide, the transept one hundred and forty-four feet, and the nave ninety-five feet high. The frescoes are in grisaille, grayish tints imitative of bas-reliefs, a very effective decoration for the interior. The evening music is very fine, and an admirable sermon in English is often preached, which attracts many non-adherents of the Roman communion.

Amongst the churches of Montreal, the Anglican Christ Church Cathedral holds first place in correctness of style. The style chosen is Early English, and the architect has insisted very clearly upon its proportion and symmetry, and has succeeded in erecting one of the most important architectural units in America. Its conception is due to Dr. Fulford, the first resident bishop of Montreal, and his memorial on the east side is much admired. It resembles the Martyrs' Memorial at Oxford. The church is in the form of a Latin cross. The total length is two hundred and twelve feet, transept one hundred feet, height of spire two hundred

and twenty-four feet, nave sixty-seven feet. The material of which it is built is Montreal limestone faced with Caen, Normandy, white sandstone, which seems to be too soft for this climate, though it weathers to a very delicate tone of colour. There is no attempt at interior decoration, except in the staining of the glass, which is well done especially the northern window and those of the transept. Other features are the seats of the choir, and the capitals of the columns carved to imitate Canadian flowering plants. The chapter house, an octagonal building with broken outlines, adds to the general effect. Behind the cathedral is the bishop's court and rectory, and synod hall. In spite of, or perhaps by reason of, the correctness of the design and the adherence to it, the edifice somehow lacks the true cathedral feeling.

CHRIST CHURCH CATHEDRAL, MONTREAL.

St. George's Church, Anglican, on Dominion square, is a very dainty piece of building after the manner of the thirteenth century Gothic. One notes the following features: the stone porch, the spire two hundred and thirty feet high, lately completed, the wide span of the roof, and the freedom of the nave from pillars. The church was erected, in 1870, of limestone and olive sandstone.

The Church of St. James the Apostle, on St. Catherine street west, is a pleasing little edifice. It contains a chime of six bells which ring with good effect. One admires the pulpit of Egyptian marble and Caen sandstone, and the stalls of carved butterwood.

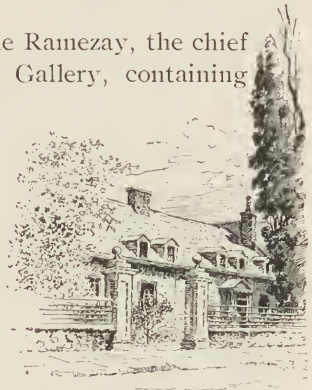
The principal Presbyterian churches are St. Andrew's (Church of Scotland), on Beaver Hall Hill; St. Paul's, Knox, American, and Crescent, on Dorchester street; and, most important of all, Erskine Church, on Sherbrooke street.

St. James is the chief of the Methodist churches. It is situated on St. Catherine street; it is elaborate in design, and, within, the arrangement is of a very modern kind.

PLACES OF VARIOUS INTEREST.

The Natural History Society's Museum was established in 1822, and incorporated in 1827. One of the charter members, J. J. Day, Q.C., is still living. It contains about seventeen thousand specimens of various kinds. On the staircase landing is an interesting collection of Montreal birds, also a small series of monkeys and marsupials, and three cases of British birds. Canadian mammals are in the centre of the main hall; cases on the left contain the geological collections, those on the right a collection of shells. The wall cases contain a

fine series of Canadian birds, and also a collection of foreign ones. In the gallery, are minerals and fishes, and also the "Ferrier" collection of Egyptian antiquities; the walls are decorated with weapons of various kinds, and amongst the miscellaneous objects there are several of quite historic interest. The museum, also, possesses cabinets of botany and entomology, and a small collection of skulls, and of birds' eggs.



CHATEAU DE RAMEZAY.

Within the Château de Ramezay, the chief features are: the Elgin Gallery, containing many rare historical portraits and relics, and especially the bell of Louisbourg; the "Court Room," hung with battle scenes of the British Empire; the "Council Chamber," where Montcalm, Charlevoix, Benjamin Franklin, Benedict Arnold, and the famous governors Vaudreuil, Haldimand and Elgin, have sat; the "Salon"; the "Parloir"; the "Old Vaults," in one of which Franklin's printing press was set up; the "Kitchen," with its great fire-place; the "Bakery." As a building, the Château is of small architectural importance; its interest being derived from its great historic associations, and the light thrown by its construction upon the methods and manners of New France.

The Fraser Institute Free Public Library was founded by Mr. Hugh Fraser, a citizen of Montreal who died 15th May, 1870, leaving considerable property to trustees. After paying certain legacies, they obtained an act of incorporation. The will

was contested, and carried to the Privy Council, but was sustained. The Institute was opened to the public, October 15th, 1885. The Library contains about thirty thousand volumes. The Institute has been the recipient of many generous donations and bequests.

THE ART ASSOCIATION BUILDING, MONTREAL.

The Art Association Building, on Phillips square, is an imposing structure well suited for its purpose.

In the collection of the Art Association of Montreal, there are one hundred and sixty-three oil paintings and forty-two water colours. The most important oils are : The Crown of Thorns, by W. A. Bouguereau ; The Huntsman, by A. W. Kowalski ; A Woodland Brook, by Bliss Baker ; La Rosée, by E. Lansyer ; Sand Dunes, by Tholen ; Dutch Interior, by Peter de Hoocke ; Sunday in the Backwoods, by T. Faed.

In the Tempest Bequest, there are good examples of C. Troyon, Jacques Henner, James Moris,

and Pelouse ; of water colours, Mauve, Israels, Jas. Moris, and de Venne.

There are many notable pictures in private hands, some of which are owned as follows :

Sir Donald A. Smith—Turner, Henner, Jules Breton ; Sir W. C. Van Horne—Monticelli, Rousseau, Daubigny, Corot, Delacroix ; Hon. G. A. Drummond—Troyon, Daubigny, Duprés, P. de Hoocke, Franz Hals ; R. B. Angus—Gainsborough, Rowney, Rembrandt, Dagnan-Bouveret, Swan, Reynolds, Monticelli ; James Ross—Rembrandt, Corot, Troyon, Millet, Fortuny, Teniers ; E. B. Greenshields—Turner, Moris, Ryder ; W. J. Learmont—Turner, Reynolds, Swan, Gainsborough.

The Victoria Bridge was long regarded as one of the greatest engineering feats in the world, but now its usefulness is over, and it is being replaced by a modern structure to accommodate modern needs of transport. It was designed by Robert Stephenson, and inaugurated by the Prince of Wales, in 1860.

The Bank of Montreal is the fifth strongest financial institution in the world. It was organized in 1817, and is the oldest bank in Canada. The sculpture on the pediment is the work of John Steel, R.S.A. The arms of the Bank, with the motto "Concordia Salus," forms the centre of the group. On each side is an Indian, one barbaric, the other becoming civilized. The other two figures are a settler and a sailor, the former with a pipe of peace in his hand, reclining upon logs and surrounded by the implements of industry and culture. The sailor is as usual pulling at a rope, and is appropriately surrounded with the emblems of commerce.

The Lachine Rapids Hydraulic Company is the second largest electrical installation in the world. A plant has just been completed for the develop-

ment of twenty thousand horse power from the waters of the Rapids.

THE HOTELS.

The hotels are not far to seek. The Windsor stands upon Dominion square, and for twenty years it has been identified with the life and growth of Montreal. The public have always looked to the

THE BANK OF MONTREAL, MONTREAL.

Windsor that strangers should be comfortably entertained until the hotel has come to be as much a representative institution as a private enterprise. The hotel seems to be managed in trust for the public solely for the convenience of travellers: which is to say, persons stopping at the Windsor are well and kindly cared for, and any one who would be friendly will find friends in the management.

The St. Lawrence Hall, on St. James street, is one of the oldest hotels in Montreal, and has many

of the advantages, with some of the disadvantages, it may be, which pertain to age. The venerable proprietor well merits the numberless epithets which have been applied to him, importing "geniality," "affability," etc.

The Queen's Hotel, facing the Grand Trunk station, is a new and thoroughly reliable house.

The Balmoral Hotel, on Notre Dame street, gives good accommodation at a very reasonable price.

The Richelieu Hotel is chiefly French in its appointments.

Of semi-private houses, the Avenue House, on McGill College avenue, is the best. The Turkish Bath, at the foot of the same avenue, is both good and reasonable in price.

Montreal is ill supplied with restaurants. The real reason seems to be that from the compactness of the city, the ease of transportation and other causes, residents prefer to eat at home and strangers dine where they lodge. Yet a reasonable good meal may be had at the Arcade Café, St. Catherine street, and at Detlef's, St. Catherine street.

In the business centre there are many lunch rooms, and in the East End one or two places with some pretensions to magnificence, especially in the mural decorations.

WEATHER OF MONTREAL.

The following is a Meteorological Abstract for the Year 1896.

187 feet above sea level. Latitude N. 45° 30′ 17″. Longitude 4h. 54m. 18.67s. W.

Month.	Thermometer.				Barometer. — Mean.	Per cent. possible bright sunshine.	Number of days on which rain fell.	Inches of snow.	Number of days on which snow fell.
	Mean.	Max.	Min.	Mean daily range.					
January	12.36	35.3	— 21.2	10.83	30.1906	39.4	. . . . .	20.7	17
February	14.75	41.5	— 23.4	14.76	29.8314	40.7	1	25.9	17
March	19.65	45.6	— 3.2	14.96	29.9339	41.0	7	39.5	18
April	41.48	77.0	17.6	16.92	30.0685	55.3	12	3.2	6
May	57.66	88.7	36 0	20.10	29.9588	59.5	16	. . . . .	. . . . .
June	64.59	86.4	44.2	17.73	29.9208	64.6	11	. . . . .	. . . . .
July	68.57	89.3	51.3	16.03	29.9323	57.2	21	. . . . .	. . . . .
August	66.75	89.7	47.8	16.32	29.9841	64.6	14	. . . . .	. . . . .
September	56.81	83.8	34.3	14.55	29.9923	52.5	17	. . . . .	. . . . .
October	43.17	58.3	21.6	12.24	30.0033	37.8	17	Inap.	3
November	34.79	57.6	8.8	13.85	30.1077	22.2	18	5.9	12
December	17.78	42.0	— 6.9	13.26	30.1605	34.1	1	10.8	14
Means for 1896	41.52	.	. . . . .	15.13	30.0070	47.41	. . . . .	. . . . .	. . . . .
Means for 22 years	41.82	. . . .	. . . . .	. . . . .	29.9795	45.75	133	117.6	78

The greatest heat was 89.7° on August 11; the greatest cold was 23.4° below zero on February 18. The extreme range of temperature was therefore 113.1. Greatest range of the thermometer in one day was 39.6° on November 19; least range was 2.8° on February 6. The warmest day was August 11, when the mean temperature was 81.15°. The coldest day was February 17, when the mean temperature was 16.02° below zero. The highest barometer reading 30.935 on December 27; lowest barometer reading was 28.786 on February 7, giving a range of 2.149 inches for the year. The greatest mileage of wind recorded in one hour was 66 miles per hour on February 11, and the greatest velocity in gusts was at the rate of 90 miles per hour on February 11. The resultant direction of the wind for the year is N. 84¾° W. Auroras were observed on 17 nights. Fogs on 8 days. Thunder storms on 15 days. Lunar halos on 8 nights. Lunar coronas on 9 nights. Solar corona on 1 day. Mock suns on 1 day. The sleighing of the winter commenced in the city on November 23. The first appreciable snowfall of the autumn was on November 15.

THE GEOLOGY OF MONTREAL.

Fourteen distinct geological formations or horizons have been described within a radius of a few miles from Montreal. Four of these belong to the Quaternary or newest system, one is doubtfully but probably referable to the Devonian, one to the Silurian (Upper Silurian of Murchison), seven to the Ordovician (Lower Silurian and Cambro-Silurian of many authors), and the remainder to the Laurentian or part of the great Archæan Complex.

A geological map of Montreal and its environs would comprise four areas marking four distinct orographic features worthy of note, as follows :

(1) A more or less hilly and mountainous plateau of Archæan rocks to the north and north-west of Montreal.

(2) A broad, flat, more or less elevated Ordovician plain.

(3) A number of conspicuous, more or less elevated conical mountains or hills of volcanic origin rising through the Ordovician plain.

(4) Marine clays and sands, gravel terraces, and raised beaches accompanied by "till" and numerous phenomena characteristic of the "Great Ice Age."

SUMMARY OF THE VARIOUS GEOLOGICAL FORMATIONS IN AND AROUND MONTREAL, CANADA, AND SOME OF THEIR MORE SALIENT CHARACTERS.

PLEISTOCENE.

Exclusive of the fresh-water, lake and river deposits of more recent times, the Pleistocene formation, in descending order, consists of the following :

I. SAXICAVA SAND FORMATION, of Eastern Canada. Characteristic fossils : *Saxicava rugosa*, *Mya arenaria*, *M. truncata*, *Macoma fragilis.*

II. LEDA CLAY FORMATION, marine clays with occasional sandy partings ; foraminiferal. Fossils : *Leda* (*Portlandia*) *arctica*, *Craniella Logani*, *Ophioglypha Sarsii*, *Polystomella crispa*, etc.

III. GLACIAL OR BOULDER CLAYS, TILL. No fossil remains have as yet been found in the Montreal glacial clays.

Localities : St. Louis and Mile-End quarries, the Tanneries, etc., are excellent collecting grounds for Pleistocene fossils.

DEVONIAN.

DEVONIAN ERUPTIVES, ETC. To the Devonian Epoch are ascribed those nepheline syenites masses, diabase, and trachyte, and other dyke rocks, which are so conspicuous and numerous about Montreal, Dawsonite, sodalite, elæolite-syenite, etc. The eruptive masses comprise Mount Royal, Belœil, Montarville, Rougemont, Mount Johnson, etc.

An occasional pebble of fossiliferous Middle Devonian limestone marks the possible existence, at one time, of a basin of Devonian rocks in the Montreal district, similar to those which are known to exist farther east along the Famine River, and in

the Gaspé Peninsula of Quebec, or to the south in the Helderberg mountains of New York State. Such Devonian pebbles occur in the volcanic agglomerates or breccias of St. Helen's Island, just south of Montreal.

SILURIAN.

Lower Helderberg Formation. Consists of somewhat limited patches of light gray and compact more or less altered limestones which abound in fossil remains, chiefly Brachiopoda. Fossils : *Favosites Gothlandicus*, *Leptæna rhomboidalis*, *Orthis eminens*, *Strophodonta varistriata*, *S. punctulifera*, *Pentamerus galeatus*, *Spirifer concinnus*, *S. cyclopterus*, *Atrypa reticularis*, *Stenoschisma formosum*, *Platyostoma depressum.* Locality : South side of St. Helen's Island.

ORDOVICIAN.

The Ordovician (Cambro-Silurian and Lower Silurian) formations in the Montreal district are seven in number, and from the Lorraine or uppermost Ordovician in Canada, down to the Potsdam sandstone there is not a single break in the succession. From Ste. Anne, a point twenty miles west of Montreal, to Chambly, there is a complete section and series of these seven formations in descending order as follows :

I. Lorraine ("Hudson River" of many geologists). Consists of dark brown and black, brittle, for the most part indurated clay and arenaceous shales and sandstones. Fossils : *Columnaria alveolata*, *Zygospira Headi*, *Pterinea demissa*, *Byssonychia radiata*, *Orthograptus quadrimucronatus*, *Clidophorus planulatus*, *Orthodesma parallelum*, *Cyrtolites ornatus.* Localities : Chambly, Rougemont, Rivière-des-Hurons, Belœil.

II. Utica Formation. Dark brown and black, brittle and bituminous shales with occasional bands of limestone at the base. Fossils : *Reteograptus (?) eucharis*, *Leptograptus flaccidus*, *Leptobolus insignis*, *Schizocrania filosa*, *Cornulites immaturum*, *Trocholites ammonius*, *Triarthrus Becki*. Localities : St. Helen's Island, West End, Point St. Charles, near Victoria Bridge.

III. Trenton Formation. Dark gray fossiliferous limestone and shales. Fossils : *Glyptocystites Logani*, *Heterocrinus tenuis*, *Pachydictya acuta*, *Plectambonites sericea*, *Prasopora Selwyni*, *Dalmanella testudinaria*, *Parastrophia hemiplicata*, *Rafinesquina alternata*, *Trematis Montrealensis*, *T. terminalis*, *Glossina riciniformis*, *Rhynchotrema inæquivalvis*, *Cyclonema Montrealense*, *Bellerophon bilobatus*, *Conularia Trentonensis*, *Trochonema umbilicatum*, *Isoselus gigas*, *Calymena senaria*. Localities : Mile-End and St. Louis quarries, Lachine, Pointe-aux-Trembles, Hochelaga.

IV. Bird's Eye and Black River Formation. Dark gray impure fossiliferous limestones. Blocks of this limestone were used in constructing the piers of the Victoria Tubular Bridge. Fossils : *Tetradium fibratum*, *Columnaria Halli*, *Solenopora compacta*, *Stromatocerium rugosum*, *Helicotoma planulata*, *Cyrtodonta Huronensis*, *Bathyurus extans*. Localities : Pointe-Claire, St. Vincent-de-Paul.

V. Chazy Formation. Light and dark gray fossiliferous limestones. Fossils : *Bolboporites Americana*, *Malocystites Murchisoni*, *Blastoidocrinus carchariædeus*, *Rhynchotrema plena*, *Lingula Belli*, *Orthis (Hebertella) borealis*, *O. imperator*, *Bathyurus Angelini*. Localities : Sault-au-Récollet, Back

Mountain, St. Martin, Terrebonne, Caughnawaga. Excellent building stone.

VI. Calciferous Formation. Dark gray, impure, more or less magnesian and arenaceous, fossiliferous limestone. Fossils : *Pleurotomaria calcifera*, *P. Canadensis*, *Orthisina Grandæva*, *Ophileta complanata*, *O. disjuncta*, *Hormotoma Anna*, *Metoptoma simplex*, *Orthoceras Lamarcki*, *Amphion Salteri*, *Bathyurus Cybele*, *Ribeira calcifera*, *Leperditia Anna*. Localities : Ste. Anne, Caughnawaga, Carillon.

VII. Potsdam (Sandstone) Formation. Light yellow, rusty-weathering sandstones. Fossil remains : *Scolithus Canadensis*, *Protichnites multinotatus*, *P. lineatus*, *P. octonotatus*, *P. septemnotatus*. Localities : Beauharnois, for tracks ; Ste. Anne, for *Scolithus*.

ARCHÆAN.

Laurentian. The "Morin area," north of Montreal, has been recently described by Dr. Adams, and forms a part of that extensive series of granites and granitoid gneisses, limestones and anorthosites so extensively developed everywhere in North-Eastern Canada, covering as they do an area of more than two million square miles.

For a more detailed account of the geology of Montreal and its environs, the reader is referred to volume VII of the "Annual Report of the Geological Survey of Canada," 1896, in which Dr. Ells, Dr. Adams and Dr. Ami present the leading geological features in the stratigraphy, petrography, and palæontology respectively. The "Geology of Canada," 1863, by Sir Wm. Logan, E. Billings, Sterry Hunt, etc., also contains excellent details on the same district, besides other districts of Ontario and Quebec.

H. M. A.

THE FLORA OF MONTREAL.

The late Dr. Holmes and Dr. Barnston were pioneers in the study of the flora of Montreal. Dr. Holmes' herbarium can be seen in the Peter Redpath Museum of McGill College. Dr. Barnston's catalogue of the Holmes herbarium was published in the "Canadian Naturalist and Geologist" for 1859.

The flora of Montreal is an exceedingly rich and interesting one, and comprises not less than one thousand species of flowering plants, most of which may be obtained within easy reach of the city. It may not be deemed out of place here to note some of the most conspicuous and interesting plant flowers which can be obtained during the month of August.

Of Compositæ, we find the following goldenrods : *Solidago rugosa*, *S. nemoralis*, *S. squarrosa*, *S. serotina*, *S. ulmifolia*, *S. Canadensis* and its variety *scabra* and *procera*. Among the asters, we note : *Aster corymbosus*, *A. Novæ-Angliæ*, *A. umbellatus*, *A. vimeneus*, *A. diffusus*, *A. tardiflorus*, *A. tradescanti*, *A. ptarmicoides*, *A. cordifolius*, *A. puniceus*, *A. tenuifolius*, *A. Macrophyllus*, and *A. lævis*. The genus *Hieracium* counts *H. Canadense* and *H. scabrum*, whilst *Nabalus albus* and *N. altissimus* are both abundant. *Lactuca Canadensis*, *L.*

integrifolia, and *Mulgedium leucophœum* are the lettuces of this district. The genus *Helianthus* has two species: *H. divaricatus* and *H. tuberosus*; *Bidens cernua* and *B. connata* are also found in August in damp waste places. *Lobelia cardinalis* and *L. inflata* are common in low wet grounds and meadows, *Chelone glabra* and *Mimulus ringens* delighting in the same habitat.

The Labiatæ are many of them August flowers, and we note: *Teucrium Canadense*, *Mentha viridis*, *M. piperata*, also *M. Canadensis*, besides *Lycopus Virginicus* and *L. Europæus* var. *sinuatus*, and *Lophanthus nepetoides*, *Leonurus cardiaca*, with the two *Scutellariæ*, *S. lateriflora* and *S. galericulata*.

The Chenopodiaceæ include: *Blitum capitatum*, *Amarantus retroflexus*, and *A. albus*.

The Polygonums are also numerous and interesting, including the following species: *Polygonum aviculare*, *P. incarnatum*, *P. Pennsylvanicum*, *P. amphibium* var. *aquaticum*, *P. hydropiper*, *P. hydropiperoides*, *P. acre*, *P. sagittatum*, *P. convolvulus*, *P. dumetorum*, besides *Rumex orbiculatus*, *R. obtusifolius*, and *Fagopyrum esculentum*, all of which may be collected in flower during the month of August.

The Euphorbiæ include: *Euphorbia humistrata*, *E. obtusata*, *E. platyphylla*, *E. peplus*.

Urtica gracilis and *Laportea Canadensis* are amongst the stinging nettles, whilst *Veronica agrestis* and *Gerardia purpurea* var. *paupercula* occur in low wet and swampy places.

Amongst other Compositæ not mentioned above are the following, which bloom in August: *Cirsium lanceolatum*, *C. discolor*, *C. muticum*, *C. arvense*, *Xanthium strumarium*, *Ambrosia artemisiæfolia*, *A. trifida*, *Artemisia vulgaris*, *Gnaphalium polycephalum*, *G. uliginosum*, *Tanacetum vulgare*, besides

Eupatorium purpureum, *E. perfoliatum*, *E. ageratoides*, and *Senecio aureus.*

The swamp fly-honeysuckle, *Lonicera oblongifolia ;* the rein orchis, *Habenaria hyperborea ;* the water-lily, *Nymphæa tuberosa ;* the water parsnip, *Sium cicutæfolium ;* the wild Bean, *Apios tuberosa ;* the rattlesnake root, *Prenanthes crepidinea*, and the lion's foot, *P. Serpentaria*, are also found in August and in bloom.

The ferns of Montreal comprise over thirty species, some of which are now exterminated. *Polypodium vulgare*, *Aspidium Nova-Boracense*, *A. cristatum*, *A. Thelypteris*, *A. Goldianum*, *A. acrostichoides*, *Cystopteris bulbifera*, *Asplenium Thelypteroides*, *A. felix-fœmina*, *Pellæa gracilis*, *Pteris aquilina*, *Adiantum pedatum*, *Onoclea sensibilis*, *O. struthiopteris*, *Woodsia Ilvensis*, *Osmunda regalis*, *Botrychium Virginianum* and *B. simplex* are amongst the interesting species.

THE CITY HALL, MONTREAL.

OF THE UNIVERSITIES.

The educational matters of Canada are under provincial control. In British Columbia, Manitoba, New Brunswick, Nova Scotia and Prince Edward Island, the schools are wholly undenominational. In Manitoba religious instruction may be given half an hour daily by their own advisers to pupils whose parents consent. In Ontario separate schools may be had under certain conditions, but in all these provinces the schools are under rigid Government control and inspection, without reference to denomination. In Quebec the schools are strictly Catholic and Protestant, each class being under control of a separate Board. The Catholic schools number 4,634; the Protestant, 976.

Of the population of Canada 71 per cent. are able to read, and 80 per cent. know how to write. Manitoba stands first with 93 per cent. and Quebec last with 64 per cent.

McGill University.

The circumstances attending the foundation of Montreal, the mixture of its languages, races and religions, have led to an emulation in multiplying charitable and educational institutions.

Montreal is the educational centre of Canada. It owes this position chiefly to the presence and

influence of McGill University, an institution which numbers in its five faculties considerably over twelve hundred students. The University owes its origin to the foresight and beneficence of James McGill, a native of Glasgow, born in 1744, and who died in Montreal in 1813. His will, dated 8th January, 1811, devised property worth £20,000 and £10,000 in money to the Royal Institution for

THE MEDICAL BUILDING, MCGILL UNIVERSITY.

the advancement of learning. This corporate body was established in 1801, and its aim was the erection of a "University or college for the purpose of education and the advancement of learning in the Province of Lower Canada." The only condition attached to the bequest was "that one of the colleges to be comprised in the said university should be named and perpetually known by the appellation of McGill College." A charter was secured in 1821, but it was not till 1829 that educational work was actually undertaken. The first principal was

Dr. Mountain, a graduate of Cambridge, and for many years the teaching staff was drawn from the Universities of Oxford, Edinburgh, Aberdeen and Trinity College, Dublin. Up to the middle of the century the history of the University is one long story of litigation, poverty, schism and political rancour.

In 1845 the principal, Rev. John Bethune, rector of Montreal, was in front of a movement to affix to the University a distinctly denominational stamp. The appointment of the principal was consequently disallowed upon the advice of Mr. Gladstone. An extract from his letter to Earl Cathcart is of interest and shows how desperate were its straits to merit such a complicated utterance :

Into the various and somewhat complicated charges which have been brought against Dr. Bethune, in his capacity as principal of the College, I do not find it necessary to enter ; nor do I wish to state at the present moment any decided opinion as to the extent to which the present condition of the Institution is owing to the character and position of its principal. My decisions are founded upon reasons which are not open to dispute : the first, the weight of the Bishop's authority together with your own, independently of any reference to that of the Board of Visitors, which may be considered to be to some extent, at this moment in dispute ; next, the fact that Dr. Bethune did not himself receive an university education, which I must hold to be, unless under circumstances of the rarest occurrence, an indispensable requisite of such a position as he occupies. To these I am disposed to add, although I express the opinion without having had the advantage of learning what may be the view of the Lord Bishop in this particular, that I cannot think it expedient that the offices of principal and professor of divinity in McGill College should be combined with that of Rector of Montreal. This circumstance is not much adverted to in the papers before me ; but I am strongly impressed that the incongruity of this junction of important collegiate appointments with a no less important

pastoral charge in the same person ; either the former or the latter of which, especially considering the large population of the town of Montreal, I must, as at present advised, hold to be enough to occupy his individual attention.

It was not till 1855 that the modern history of McGill University began. In this year Sir William Dawson was appointed principal, and he witnessed through a long and laborious career, devoted to education and science, the expansion of an insignificant and provincial school into a university which is now admitted to the sisterhood of the great British educational institutions.

Upon his retirement in 1894, the present principal, William Peterson, was appointed as his successor.

McGill University possesses five faculties : Arts, Law, Medicine, Science, and Comparative Medicine and Veterinary Science.

The teaching staff numbers ninety-five professors, lecturers, and demonstrators, and the undergraduate body 1,267.

The buildings of the University and the affiliated colleges are grouped together at the foot of the Mountain in a beautiful campus, adorned with avenues of the Canadian maple. Many of the edifices are newly erected of cut stone, and altogether constitute a fitting abode for a great university or for the meeting of the British Medical Association.

The Faculty of Arts is now receiving special attention from the principal and governors. The faculty numbers sixteen members and has three hundred and ninety-five students, of whom one hundred and forty-five are ladies. Its home is in the original building of the University, and was long its only faculty.

The central or Arts' building was the first edifice erected. It is in the Italian classic style in vogue at that time. It is simple yet dignified and academical, and consisted of a central building three storeys high and surmounted by an octagonal cupola, and having in front a broad flight of steps and a heavy impressive Doric portico. This building was flanked on each side by a wing one storey in height.

The next building to be erected was the East wing, which was four storeys in height, inclusive of the basement. This was long dually occupied by the principal, Sir William Dawson, and the secretary, Mr. Baynes. Recently it was converted into the abode of the Law faculty and for the enlargement of the University offices.

On the West side the Molson Hall forms a corresponding wing to that of the East one, and is sufficiently harmonious in style to blend with the central block. The connecting wings were then raised another storey to give increased accommodation, which, however, has detracted from the effect and balance of parts.

The Peter Redpath Museum.

The Peter Redpath Museum was erected in 1882 by the liberal benefactor whose name it bears. It occupies a commanding position at the upper end of the campus, and besides its central hall and other rooms devoted to the collections, contains a large lecture theatre, class-rooms and work-rooms.

The building is in what may be called the Neo-Grec style with a slight feeling of earlier work in it; it is an effective building, simple in its lines, dignified in its mass and well lighted.

The general arrangement of the collections is as follows:

1. The botanical room on the ground floor contains the herbarium, consisting of 25,000 specimens of Canadian and exotic plants, and collections illustrating structural and economic botany.

2. On the first floor is a room over the entrance hall, in which are cases containing archæological and ethnological objects, with large slabs of fossil foot-prints on the walls. A mummy from the Fayoum, presented by Dr. Roddick, a Haida totem post from the Queen Charlotte Islands, presented by Dr. Buller, and a series of Guanche specimens from the Canary Islands, presented by Dr. Lambert, are especially worthy of notice.

3. This room opens into the great Museum Hall, on either side of which are alcoves with upright and table cases containing the collections in palæontology, arranged primarily to illustrate the successive geological systems, and subordinately to this, in the order of zoological and botanical classification, so as to enable the student to see the general order of life in successive periods, and to trace any particular group through its geological history.

4. At the extreme end of the Hall are placed the collections of minerals and rocks, arranged in such a manner as to facilitate their systematic study. In the centre of the Hall are economic collections and large casts and models.

5. In the upper storey or gallery of the great Hall are placed the zoological collections—the invertebrate animals in table cases in regular series, beginning with the lower forms, the vertebrate animals in upright cases, in similar order. The Philip Carpenter collection of shells is especially noteworthy for its arrangement and completeness.

The University Library.

The University Library stands at the western bounds. For this building the Romanesque style was adopted as being collegiate and semi-ecclesiastical in character. The reading-room has a high open timber roof, reminding one of the great mediæval halls.

THE UNIVERSITY LIBRARY.

The Library contains 60,000 volumes. It is newly built and is the gift of the late Peter Redpath.

Mention is also to be made of the Observatory, under Professor McLeod, with its rich astronomical equipment, and whose position is believed to be the most accurately established in America.

The Medical Faculty.

The origin of the Medical faculty of McGill University is closely bound up with the founding of the Montreal General Hospital. When this great charity

was accomplished the attending medical staff was composed of the most prominent and ablest men in the city, Doctors W. Robertson, W. Caldwell, A. F. Holmes, I. Stephenson and H. P. Loedel. On October 20th, 1822, these men met together "for the purpose of taking into consideration the expediency of establishing a medical school in this city," and it was resolved "that the considerations which seemed to warrant so desirable an object should be drawn out and laid before the next meeting of the Board, to be held on the 27th of the same month, and that Drs. Stephenson and Holmes be appointed a committee for the said purpose." Thus was started the first Canadian medical school, which afterwards, as we shall see, became the medical faculty of McGill University. The school was called the "Montreal Medical Institution," and received the approval of Lord Dalhousie, the Governor-in-Chief of Lower Canada, and he appointed the members of the Institution a Board of Examiners for the district of Montreal. Formerly these examinations had been conducted by a board of army medical officers, appointed by the Governor.

The first course of lectures was given in 1824, in a small wooden house in Place d'Armes, the site of which is now occupied by the Bank of Montreal. Twenty-five students attended the first session, and for some years there was no increase in the number.

The following is the advertisement of the lectures :—

Anatomy and Physiology—I. Stephenson, M.D.

Chemistry and Pharmacy—A. F. Holmes, M.D.

Practice of Physic—W. Caldwell, M.D.

Midwifery and Diseases of Women—W. Robertson, Esq.

Materia Medica—H. P. Loedel, Esq.
Surgery—I. Stephenson, M.D.
In the course of the summer, 1825 :
Botany—A. F. Holmes.

Although Mr. Loedel's name appears as lecturer on Materia Medica, there is no evidence that he ever gave any lectures on that subject. Dr. Lyons, one of the staff of the Hospital, apparently did the most, and on Mr. Loedel's retirement a year or two later, received the appointment of lecturer. For four years the Medical Institution continued its work, when, in 1828, to prevent the lapse of the McGill bequest to the residuary legatees, the Montreal Medical Institution became the Faculty of Medicine of McGill University.

The leading spirits of the school were Stephenson and Holmes, both Canadians, Stephenson by birth and Holmes by adoption, for he arrived in the country when only four years of age. They both received their preliminary education here and then went to Edinburgh, where they took their doctor's degree. The Montreal Medical Institution, which afterwards became the Medical faculty of McGill University, was modelled on the lines of the Edinburgh University, and to this day the McGill Medical faculty bears the marks of its relationship to the Alma Mater of its founders.

In 1811 the Hon. Peter McGill, one of Montreal's most prominent merchants, died, and left a considerable amount of land (forty-six acres) and £10,000 in money for the purpose of endowing a college to bear his name and to form part of a university which the citizens were led to believe was about to be established by George III., and to be endowed by Crown lands. The Legislative Assembly, in 1801, passed a statute organizing the Royal

Institution of Learning, and the Lieutenant-Governor announced that it was the intention of His Majesty "that a suitable proportion of the lands of the Crown should be set apart" to endow this Royal Institution, but like so many other promises of princes and politicians, they did not "materialize," and the royal endowment is still a thing of air. The Royal Institution was not constituted until 1819, and in 1821 George IV. granted it a royal charter, and thus a university with full powers was established. Owing to litigation the Royal Institution could not get possession of Mr. McGill's bequest until 1829. It was a condition of the gift that lectures should be given within a certain number of years or the bequest would lapse and the property revert to the Des Rivières family. Only one year remained, and no arrangement having been made for the establishment of a faculty of Arts, in fact, no money being available for that purpose, the Montreal Medical Institution was constituted a faculty of the University and this was chiefly accomplished by the exertions of Dr. Stephenson, to whom the University, in a large measure, owes the preservation of the bequest of the Hon. James McGill.

The governors of the Royal Institution held a meeting 29th January, 1829, with the members of the medical school, and the following minute occurs :

After public business was over, the governors of the Corporation held an interview with the members of the Medical Institution (Drs. Caldwell, Stephenson, Robertson, and Holmes), who had been requested to attend a meeting for that purpose. Owing to this interview it was resolved by the governors of the Corporation that the members of the Montreal Medical Institution be engrafted in the College as its Medical faculty, it being understood and agreed upon

between the said contracting parties that, until the powers of the charter would be altered, one of their number only should be university professor and the others lecturers. That they should immediately enter upon the duties of their respective offices. All of which arra gements were agreed to.

The first session of the Medical Faculty of McGill College was held in 1829. Thirty-five students were on the register, and the Faculty has continued the sessions ever since, with the exception of the three sessions between 1836 and 1839, when internal troubles afflicted the country. In 1833, the site of the present university buildings, and also a considerable amount of property below Sherbrooke street was a farm, and the Medical Faculty was given charge of it ; how successful it was as a farmer is unknown, but soon it was put under other management. In 1823, five professors were appointed in the three faculties of divinity, arts and law, and Thos. Fargues, M.D. Edinburgh, a resident of Quebec, was appointed to the professorship in medicine. He never lectured, however, for soon after the tedious lawsuit by the relatives contesting the will of the Honorable Jas. McGill commenced and prevented the teaching scheme going into operation. When the members of the Medical Institute became the Medical Faculty of McGill University, they taught the same subjects as before.

On the death from cholera, in 1833, Dr. Racey, of Quebec, was appointed associate lecturer on midwifery. In 1835, the late dean Dr. Geo. W. Campbell was appointed to the chair of surgery ; Dr. Stephenson, after this devoting his whole time to the teaching of anatomy and physiology instead of anatomy, physiology and surgery. Dr. Campbell also lectured on midwifery,

that chair being again vacant by the resignation of Dr. Racey, Dr. Archibald Hall was now appointed lecturer on Materia Medica, thus relieving Dr. Holmes who previously lectured on chemistry and Materia Medica. The death of Drs. Robertson and Stephenson, in the early forties, caused vacancies in the chairs of medicine and anatomy, and also in consequence of the division of chairs which was taking place in Great Britain, a rearrangement was made of the appointments in the Medical Faculty, and for this a number of new men were introduced.

The following is the advertisement of lectures for the session 1846-47, taken from the "British American Medical Journal" :—Theory and practice of medicine, A. F. Holmes ; principles and practice of surgery, G. W. Campbell ; chemistry, A. Hall ; midwifery and diseases of women and children, M. McCulloch ; anatomy (general descriptive), O. T. Bruneau ; Materia Medica and pharmacy, S. C. Sewell ; clinical medicine and surgery, I. Crawford ; institutes of medicine (physiology, etc.), R. L. MacDonnell ; medical jurisprudence, Wm. Fraser ; practical anatomy, W. E. Scott ; curator of museum, Wm. Wright.

The last mentioned, Dr. Wright, is the only one now living, and he is hale and hearty. Some years ago, he was made an emeritus professor of Materia Medica. The lectures were held at this time in what is now the central building of the Arts Faculty, and students who desired it could board in the college. The advertisement says "the price of board, including lighting, heating and attendance, but exclusive of washing, has been fixed at thirteen dollars a month, always payable in advance." A summer session is also advertised, commencing on the 2nd May, 1847, consisting of lectures in medical

jurisprudence, by Dr. Wm. Fraser, and in botany, by Dr. Papineau.

Dr. Robert MacDonnell came out from Dublin to take the chair of physiology, and he introduced modern methods of clinical teaching acquired from his relative, the great Dr. Graves, of Dublin. Dr. MacDonnell was the first to introduce into Canada the use of the sthethoscope.

The University Lying-in Hospital was founded in 1843, a committee of ladies managing it, and the surgeon in charge being the professor of midwifery. In 1849, the clinical chair was divided, Dr. Robert MacDonnell taking clinical surgery, and Dr. Crawford retaining clinical medicine. In 1848, the corporation of the University passed a regulation requiring four full years of professional study as a necessary qualification for the M.D.C.M. degree; afterwards (1858) modified so that a year with a doctor was accepted as equivalent to the first session at the University. Three full sessions at the college in addition had to be attended by the aspirant for the medical degrees.

It has always been the ambition of the Faculty to keep in the van of medical progress, and as they felt sure of their ground, reforms and improvements were from time to time introduced, as for instance the compulsory bedside examination in 1870, the summer session in 1876 with compulsory courses in midwifery and clinical chemistry, and a compulsory course on morbid anatomy. In 1878, feeling the importance of practical anatomy at the instance of the then demonstrator, a compulsory practical examination on the actual dissections was instituted. In 1879, a laboratory for practical physiology was instituted by Dr. Wm. Osler, and the students were afforded opportunity of practical work. In 1884,

four full years at the University were required as qualifying for the M.D.C.M. degree, the possession of a B.A. degree not as heretofore allowing a man to go through in three years. In 1894, the sessions were extended to nine months.

The year 1855 was an important one for the University. In that year, John William Dawson was appointed principal; from the time he took office, until his retirement in 1895, his heart and soul were in the work of the University, and no one did more to advance its interests, in season and out of season, than Sir Wm. Dawson. The proud position the University holds to-day is, in a great measure, due to his exertion. Soon after coming here, he became the professor of botany and zoology in the Medical Faculty, and for many years lectured successfully on those subjects, and in this way he became known to hundreds of graduates scattered over this continent, by whom he was much beloved and respected.

In 1853, the new Medical School Building, on Coté street, was completed and occupied by the Faculty; it was situated near Craig street, and next door to the Theatre Royal. For the time, the building was a commodious one, and satisfactorily fulfilled the purpose for which it was built. The Faculty now possessed a library and museum, and a good dissecting-room. For twenty years the Faculty occupied this building. In 1872, by the exertions of the principal and members of the Faculty, aided by the liberality of the governors, a new and handsome cut-stone building was provided in the University grounds. This is now the central building, and as will be seen has been greatly added to. Dr. Geo. W. Campbell was dean at this time, and together with other members of the Faculty fur-

nished both library and museum. Dr. Howard, in his address at the semi-centennial celebration of the Faculty, has eloquently discussed Dr. Campbell's merits and told us what we owe him.

On Dr. Geo. W. Campbell's death, in 1883, he was succeeded in the deanship by Dr. Robert Palmer Howard than whom no one has cast more honour on the Faculty and University. Dr. Howard's lectures on the practice of medecine will long be remembered by those who listened to them, with what earnestness and conviction he taught both in the lecture room and at the bedside, how thoroughly he kept his class posted in the latest advances in pathology and medicine, and how he stimulated them to honest work! Alas! he too passed away, and was succeeded by others who followed in his footsteps, especially by two men whose early deaths we still continue to deplore, Dr. George Ross and Dr. Richard MacDonnell. Dr. Ross was elected vice-dean and assistant to the present able occupant of the deanship, Dr. Robt. Craik. Dr. Ross, from his wide clinical and hospital experience, and his logical mind, became the best clinical teacher Montreal, and perhaps even Canada, has ever seen, and no student could attend his clinics without acquiring accurate methods of examination and powers of estimating the value of symptoms. Dr. Richard MacDonnell, who succeeded him, was making a reputation for himself, both by his teaching and writings, when he too was called away. Dr. MacDonnell, by his high sense of honour, strict integrity and courteous manners, endeared himself to all who knew him.

The Faculty of Medicine has always, with one or two exceptions, been composed of native-born Canadians, educated by the University in which they

held appointments. At the present time out of the twenty-one professors only three are not natives of Canada.

The increase in the number of students has been progressive. From 25 at the first session in 1824, it jumped to 50 in 1844; in 1872–3, there were 154 students with a graduating class of 35; in 1892–3, 315 with 45 graduates; in 1895–6, 419 with 90 graduates. In 1824 we have seen there were only four teachers, increased in 1846 to ten.

In the calendar of 1852–3 (a small pamphlet), there were still only ten teachers, of whom Dr. Holmes alone was a professor. In the calendar for 1897–98, which is quite a large book, the number of professors is 21; lecturers, 7; demonstrators, 23—in all 51 teachers, teaching 21 subjects. The number of graduates in medicine since the establishment of the Faculty is over 1,500. The condition of the Faculty is now a most prosperous one, and this prosperity has been, in a large measure, due to the generous friends who came forward with money to endow chairs, such as pathology, hygiene. In 1883 Sir Donald A. Smith gave the Faculty $50,000 on condition that they would raise an equal sum from amongst their friends. This was easily accomplished, and by this means $100,000 was placed to the credit of the general endowment of the Faculty, which before had amounted to only a few thousands of dollars. One part of the fund is called the Campbell Memorial Fund in memory of the late Dean Geo. W. Campbell.

In 1891 Mr. Walter Drake endowed the chair of physiology to the extent of $500 a year in memory of his brother, the late Dr. J. Morley Drake, professor of physiology, and in 1892 the College received a bequest of $10,000 from the estate of

the late Mrs. Mary Dow. In 1893 the Faculty was very fortunate, receiving $160,000, $60,000 from the late J. H. R. Molson for the purchase of land and erection of a pathological building, and $100,000 from Sir Donald A. Smith for the endowment of the chairs of pathology and hygiene. By means of these generous gifts and other smaller ones, the Faculty was enabled to erect and equip

MCGILL MEDICAL LIBRARY.

modern laboratories and research rooms, so that now its position and capacity as a teaching body is not excelled by any medical school on this continent.

It is not so many years ago since all that was thought necessary for teaching in a medical school were lecture rooms, a dissecting room and *one* microscope. Now there is a splendid library and museum, magnificent laboratories and research rooms, with every kind of apparatus and appliances.

The library has an interesting history, and its growth has been marvellous of late, chiefly owing to the exertions of the assistant librarian, Miss

Charlton. It was founded by the members of the Montreal Medical Institution on the 27th of August, 1823, and when the Medical Institution became the Medical Faculty of the McGill University the library was transferred. The library was originally the property of the members of the school collectively, and no one could transfer his share of the library. In case of dissolution of the Institute it was provided that the library should remain, unless dissolved by unanimous consent. To become a member of the library each member had to pay in the sum of £7.10 and an annual subscription of £2.10 was required. To the late Dr. Holmes the library owes much. When alive he was most active in its support and most interested in keeping it efficient. There were about 1,500 volumes in 1829, now we have 15,000. The present museum is much indebted to the energy and persistency of the late Dr. Geo. E. Fenwick in obtaining specimens. Most of the beautiful specimens exhibiting diseases of bones are contributed by him. Dr. Fenwick, as professor of surgery, was well-known and much beloved throughout the Dominion, and he did much, not only for the College, but for the General Hospital, with which institution he was intimately connected for many years, and where he was long looked upon as a father in surgery by many practitioners and students.

The names of many men might be mentioned who have passed away after having worked faithfully and successfully in the field of medicine and whose connection with the McGill Medical College should not be forgotten, notably Hall, Fraser, Sutherland, Scott and Drake, in addition to those already alluded to. Fortunately all the men who were long connected with the Medical Faculty

and helped to build up its reputation have not joined the majority. Two are still with us: Dr. Wright and Dr. MacCallum, the latter still in active work as chairman of the Medical Board of the General Hospital. He evinces the greatest interest in medical matters.

Dr. Wm. Osler, whose reputation as a scientific practitioner was established during his connection with his Alma Mater as professor of physiology and pathology, though he has not yet joined the majority, has left us. Since his translation to Johns Hopkins' Hospital his reputation and fame have spread, and deservedly so.

Of the active members of the Faculty it is not the intention to speak. That may be left to those who come after. This much, however, may be said: "Their labors have not been in vain."

F. J. S.

The home of the Faculty of Medicine is an irregular collection of buildings situated in the north-east portion of the University grounds.

These buildings may be reached either from the main drive which leads up to the Arts Building from Sherbrooke street, or by entering the grounds from University street, by the University street gates.

The medical buildings have grown up in response to the needs of the school. The front building, of plain stone, is the oldest, and was presented to the Faculty of Medicine, in 1872, by the governors of the University. In direct connection with this are two additional buildings, the intermediate structure, chiefly of brick, was erected in 1883 by the Faculty, and the larger new stone building behind this was erected in 1894 by the late

John H. R. Molson to meet the increasing demand for laboratory space.

Directly attached to this building, on the north, is the wing for pathology. This was a stone dwelling house which was completely altered to meet the requirements of a modern pathological laboratory.

The total length of the main corridor of the Medical Building is two hundred and seventy-eight feet, and the ground area covered is over twenty-two thousand five hundred square feet. The total available floor area of the Faculty buildings is about fifty-five thousand square feet.

The first building reached from the College grounds has two entrances, the main entrance with its limestone portico leads to the main floor of the buildings. The second, on the east side, is the students' entrance and leads to cloak rooms, laboratories, locker rooms, etc., and is connected with the janitor's apartments. The ground floor is laid in asphalt throughout, and the walls are panelled in ash. The lavatories have both walls and floors tiled.

The library is reached by the first door to the left of the main entrance. The first room on entering is the general reading room for the use of students and strangers. This connects with the stack room, behind which is the Faculty room, and professors' reading room. The library, which is entirely medical, contains about fifteen thousand volumes, among which are complete sets of many of the standard periodicals in English and German, and also many rare volumes of interest to the antiquary. The library has between five and six thousand readers per annum.

On the opposite side of the hall is the pathological museum, consisting of two rooms, each with

a gallery. The first of these is reserved for calculi and bone specimens, the second contains only moist preparations and models. This has been newly renovated, and presents not a few features which may appeal to those interested in museums.

Adjoining the museum is the office of the Registrar and Bursar of the Faculty ; a rise of three steps marks the beginning of the second building, the main floor of which is occupied on the right by the chemical laboratories. The laboratory is 60 by 45 feet, accommodates 124 students, and has connected with it a private laboratory and an outdoor laboratory. On the left is a lecture theatre with seating capacity of about 250, in which the section of Anatomy will meet. Adjoining the lecture room is the professors' cloak room.

The new wing is reached by a short flight of steps, passing the students' reading room and a small cloak room on the left, the entrance to lecture room No. 3 is reached. This room is rectangular, and has a seating capacity of over four hundred. Here the Surgical section will meet.

Behind this lecture room are two preparation rooms for the use of the professor of chemistry and an ante-room.

On the opposite side of the hall is the private entrance to the pathological wing. This leads to the small research laboratories, preparation rooms and the private laboratory of the professor of pathology.

Above these rooms is the large students' laboratory for pathology, opening into the main building and connected with the private laboratories. Tables and microscopes for thirty to forty students are provided. The floor above this is for the use of the curators and the articulators of the pathological and anatomical museums.

From the students' entrance to the laboratory the mezzanine floor is reached, in which is the upper entrance to the lecture room and the museum of hygiene, which contains interesting working models of filter plants, steam disinfectors, ventilating contrivances, etc. One of the smaller rooms opposite is used to illustrate the water carriage system of removal of house refuse, including modern plumbing.

On the floor above this are, beginning on the right, the laboratory for normal histology, with two sets of tables for microscopes at different levels and an adjoining private laboratory for special work.

Next to this is the laboratory and museum of pharmacology, containing a classified collection of typical drugs and therapeutic agents, together with appliances for instruction in pharmacy and elementary experimental pharmacology.

The rest of this flat is occupied by the laboratories for the study of Physiology. They are four in number, one large laboratory for the use of students, two smaller ones connected for special work and the professor's private laboratory. The students' laboratory is arranged for demonstrations as well as for individual work at the smaller tables.

Descending the staircases near the entrance to the physiological laboratory, the upper floor of the middle and front buildings is reached. This floor is practically reserved for the study of anatomy. The lecture room No. 2 in which the Pathological section will meet, has the seats arranged in a semicircle and will seat about three hundred.

Beneath this is a small private dissecting room and demonstrator's room. The private room of the professor of anatomy connects the lecture room

with the anatomical museum. This museum contains besides the usual moist and dry preparations and casts illustrating human anatomy (1) an interesting collection of human brains made by Professor Osler; (2) a collection of skeletons and bones of the extremities of the various orders and classes of vertebrata; (3) numerous frozen cross sections of the human body and a complete set of Steger's brain sections.

The dissecting room opposite is L shaped, one arm 76 by 31 feet, the other 45 by 32 feet. It contains tables for thirty subjects. The floor is of lead; the room is well lighted for work by day or night. It occupies the south and west of the first or oldest building of the series.

R. F. R.

The Faculty of Applied Science.

The Faculty of Applied Science provides a complete training in civil, mechanical, electrical and mining engineering, in architecture and chemistry. Each course covers a period of four years. The teaching staff is twenty-four in number, and there are in attendance two hundred and five students. It is in this department the most striking progress has been made in recent years, in the erection of new buildings with laboratories, workshops, machinery and appliances of every kind suitable for demonstrating all the operations of engineering, till the main building resembles the site of some enormous industrial establishment.

At a very early period in the history of the University, the attention of the authorities was drawn to the importance of establishing a department of practical science, and in the year 1856 T. C. Keefer, C.E., C.M.G., was appointed pro-

fessor of hydraulic engineering. At the same time Robert Crawford, B.A., was made professor of road and railway engineering, which position he held until the year 1857, when he was succeeded by Mark J. Hamilton, C.E., who held the post until the year 1865. The first graduate was Oliver Gooding, who, in 1858, received the diploma of Civil Engineer; and the total number of graduates up to 1865, when the department lapsed, was 15. In 1871 the department was re-established in connection with the Faculty of Arts, the special course of study extending over three years, and leading to the degree of Bachelor of Applied Science. In December of 1876, Henry T. Bovey, M.A., Fellow of Queen's College, Cambridge, was elected to fill the chair of Civil Engineering and Applied Mechanics, and assumed the duties of his office in September, 1877. In 1878 the department was separated from the Faculty of Arts and was constituted a Faculty of Applied Science, with Professor Bovey, M. Inst. C.E., LL.D., F.R.S.C., as dean. These duties he still continues to discharge and the present position of the Faculty in respect of prestige and equipment is a monument to his talent and industry. The course was also lengthened by adding to it a preliminary optional year, the complete course thus extending over four years and leading first to the degree of Bachelor of Applied Science, and subsequently to the degree of Master of Engineering, or Master of Applied Science.

In the year 1890 a new career was opened up to the Faculty and the efficiency of the teaching staff was increased by new appointments.

For many years, Professor Bovey had been endeavouring to secure sufficient funds for the

erection of laboratories and workshops, so that the scientific work in engineering might be conducted in a manner more in accordance with the advancing requirements of present and future times, and in the year 1889 the first step in this direction was made possible by the large sum of one hundred and seventeen thousand dollars bequeathed to the University by the late Thomas Workman. Mr. Workman's endowment became in fact a part only of a newer scheme, which was to provide laboratories for the scientific teaching of all branches of engineering. The generosity of Mr. Macdonald brought about this realization of an ideal development.

The preliminary plans prepared by Professor Bovey with Mr. Taylor were taken to England by him, and submitted to many of the leading physicists of Great Britain to obtain their opinions and advice.

The Engineering Building.

On October 25th, 1890, the corner-stone of the Engineering Building was laid by His Excellency Lord Stanley of Preston, governor-general of Canada. From that time the work was rapidly pushed forward. The Faculty took possession of each part as completed, and the engineering and physics buildings were formally opened by Lord Stanley, on February 24th, 1893.

For the style of the architecture, Italian Renaissance was chosen of a simple and severe type, as suitable for its purpose, and yet not inharmonious with the Museum already built on the other side.

The Macdonald Engineering Building is about one hundred and seventy-five feet in length, from fifty-five feet to sixty-five feet in width, and has

a basement, five stories, and a large amount of attic room in the roof. In the basement, below the testing laboratories, are to be found Worthington and Blake duplex steam pumps. The ground floor is occupied by the testing and hydraulic laboratories, the lighting station, engine room containing an eighty-horse power McIntosh & Seymour engine for driving the experimental dynamos, the geodetic

THE MACDONALD ENGINEERING BUILDING.

and thermodynamic laboratories. One half of the thermodynamic laboratory occupies two stories. On the first floor are the cement testing-room, electrical, mathematical and thermodynamic laboratories, the electrical workshop, the mechanical engineering lecture-room, private offices, cloak rooms, and lavatories. On the second floor are the magnetic laboratory, the mathematical, surveying and applied mechanics lecture rooms, the library, instrument room, private offices, cloak rooms, and lavatories. The library is a very handsome room, containing between four and five thousand

books specially relating to the work carried on in the Engineering Building. The whole of the third floor is taken up by splendidly lighted drawing rooms, while the engineering museum occupies the whole of the fourth floor. Amongst other apparatus, the museum contains the Reuleaux collection of kinematic models, presented by Mr. Macdonald, and pronounced by Professor Reuleaux to be the finest and most complete collection in America.

Workshops. — The workshops erected on the Thomas Workman endowment have a floor area of more than twenty-five thousand square feet.

The practical instruction in the workshops is designed to give the student some knowledge of the nature of the materials of construction, to familiarize him with the more important hand and machine tools, and to give him some manual skill in the use of the same. For this purpose, the student, during a specified number of hours per week, works in the shops under the superintendence of the professor of mechanical engineering, aided by skilled mechanics. The courses commence with graded exercises, and gradually lead to the making of joints, members of structures, frames, etc., finally concluding in the iron-working department with the manufacture of tools, parts of machines, and, if possible, with the building of complete machines.

The Physics Building.

The Macdonald physics building has been erected and equipped for the teaching and study of physics, including mechanics, with special regard to its intrinsic importance as an integral part of a liberal education in the Faculty of Arts, and its essential necessity as a study preliminary to the courses of

engineering, mining, and practical chemistry in the Faculty of Applied Science, and the prosecution of original research.

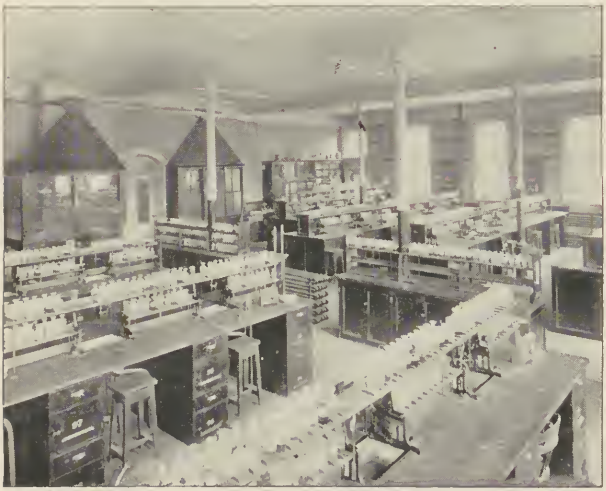
The building is one hundred and twenty-five feet long, sixty-four feet wide, and has five stories, besides a range of attics, used for storage, in the mansard roof. It is constructed of cut Montreal limestone, lined with pressed brick. As this building was not symmetrical with any other, the limitations of design were not felt to be so binding and the Romanesque style, so popularized at that time, by the genius of Mr. Richardson, was adopted by the architect as being elastic enough for the special requirements of a modern science building, and at the same time impressive in its solid mass and dignity.

At the present moment this same Faculty is entering upon a still wider life with the more complete equipment of its departments of chemistry, mining, metallurgy and assaying.

Chemistry.—The new building, in addition to three large general laboratories accommodating about 200 students at a time, will have a number of smaller laboratories and rooms for special purposes and for research work in inorganic and organic chemistry. After due consideration the Italian Renaissance style of a slightly florid type was adopted, as blending some of the characteristics of both the buildings between which it was placed. It is expected that this building will be finished about the end of this year, and will then complete the triple memorial of the donor, Mr. Macdonald. They are also a monument to the architect Mr. Andrew T. Taylor. Among the special rooms may be mentioned those for physical chemistry, iron and steel analysis, gas analysis and photography. Provision will also be made for practical work in mineralogy

and petrography, subjects which have come to be essentially departments of chemistry and physics, and which are at the same time intimately related to mining and metallurgy.

The principal lecture room, extending through two floors, is entered at the ground level, but each of the higher floors will also have its class room. On the second there will be a library, and also a museum for chemical products. The rooms for



CHEMICAL LABORATORY, MCGILL MEDICAL COLLEGE.

allied purposes will, as far as possible, be grouped together on the same floor, and in addition to a large elevator there will be a hand-lift. The building will be practically fire-proof, and will be lighted throughout by electricity. When it is completed it is hoped to organize new courses and to greatly extend the scope of the chemical work.

The Metallurgical Laboratory is to be fitted with a water jacket blast furnace, twenty-four

inches inside diameter, for smelting lead and copper; and with the necessary blast apparatus. Also with reverberatory furnaces, a Bruckner cylinder furnace, an English cupellation furnace and several crucible furnaces. It is also to have a complete set of apparatus for chlorination and leaching of silver and other ores, and a cyanide extraction plant for gold ores.

The Milling Room will be equipped with a complete working plant for ore dressing, capable of treating about ten tons of material per day, the chief pieces of apparatus being: rock-crushers, stamp mills of 300, 600 and 900 pounds, respectively; a Huntington mill, coarse and fine crushing rolls; trommels and sieves for sizing material, Hartz and Collom jigs, revolving, bumping and belt tables, amalgamating plates and pans, spitzkasten, spitzlutten, and magnetic separators.

The Assaying Laboratory, in the south wing, is to be equipped with a complete set of muffle and crucible furnaces, some of each being arranged for gas and oil, and others for coke or charcoal fuel. Connected with this laboratory are rooms with pulp and assay balances, and a small but well equipped laboratory for wet analysis.

Architecture.—This department has only recently been added to the Faculty, work having begun in session 1896–7. The founder of the department has further munificently undertaken to complete its equipment, and already a large number of valuable books have been added to the Faculty library.

To enumerate the apparatus and appliances stored in these enormous buildings would be merely to write a catalogue of the best that is produced to-day for the experimental work connected with all the branches of engineering and physics. It is

a fact of European fame that the equipment of the Faculty of Science is excelled nowhere in any country. Best of all Professor Bovey has gathered round him a staff in whose hands this wealth of resource is being utilized to the fullest extent in the application of scientific principles to all the arts and professions allied with and included in engineering in its widest conception.

The Faculty of Comparative Medicine and Veterinary Science.

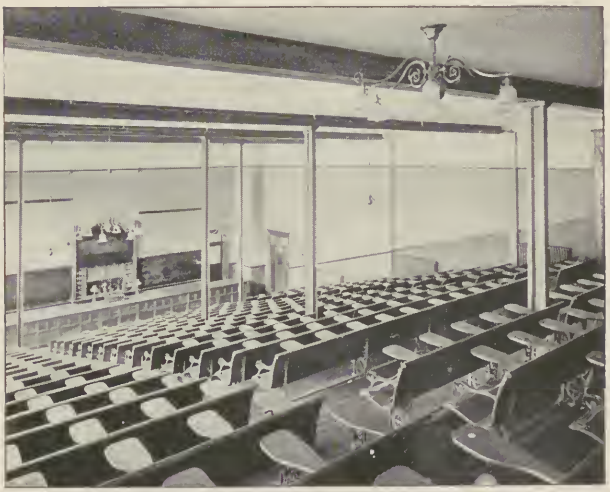
Thirty-one years ago, at the suggestion of Sir William Dawson, then principal of McGill University, the late Professor George W. Campbell, dean of the Faculty of Medicine, and the late Major Campbell, of St. Hilaire, president of the Board of Agriculture of Lower Canada, a small grant was given by the Government for the inauguration of a course of lectures on veterinary science, and arrangements were made with the Faculty of Medicine for admission of the students to such of the medical lectures as were embraced in the curriculum of the veterinary course.

Duncan McEachran, V.S., Edin., F.R.C.V.S., was appointed director of the school and lecturer on veterinary medicine and surgery.

From the inception of the school Professor McEachran set himself to work to raise the educational standard of this profession. While as yet the British and American veterinary colleges permitted graduation after two sessions' attendance, and required no matriculation; at Montreal, students were only admitted after examination and the course extended over three sessions, running conjointly with the medical courses of lectures, the veterinary students attending those on chemistry,

institutes of medicine and botany, along with the medical undergraduates.

In 1875 the present College buildings were erected on Union avenue at the expense of the director. The progress of the school was such as to attract students from all parts of the United States and Canada, and the success of the graduates so great that many of them received appointments



LECTURE ROOM NO. 3 MCGILL MEDICAL FACULTY.

as lecturers in veterinary and agricultural colleges and filled important government appointments both in Canada and the United States, and several have won distinction as authors of text books.

In 1889, on the recommendation of the Faculty of Medicine and Corporation of McGill University, the governors created a faculty of comparative medicine and veterinary science, and appointed the director of the Montreal Veterinary College, dean and professor of veterinary medicine and

surgery, Malcolm C. Baker, V.S., professor of veterinary anatomy, and Charles McEachran, V.S., professor of cattle pathology and veterinary obstetrics, and Prof. G. P. Girdwood, Prof. Wilkins, Prof. Penhallow, Prof. Mills, associate professors. Professors Adami and Blackadder being subsequently added. A. N. Shewan, M.A., was appointed matriculating examiner, and the following extramural examiners named by the Government and appointed by the governors of the University to assist at final examinations, viz.: J. A. Couture, D.V.S., A. McCormick, D.V.S., A. W. Harris, D.V.S., John M. Parker, D.V.S., Frank Miller, V.S., and A. W. Clement, D.V.S.

Royal Victoria College.

This new addition to McGill University is situated on Sherbrooke street, at the head of Union avenue, just outside the grounds.

The new college is a gift from Sir Donald Smith, and is intended for the education of women in connection with the Faculty of Arts.

Its length is 190 feet by 76 feet deep, with a rear centre extension 64 by 70 feet. The building is Scotch Baronial with a slight Renaissance modification. The exterior is picked face Montreal limestone, laid in Scotch range work. It has five floors besides the basement. The three upper floors are in suites of two bedrooms and one parlour. The two first are for study and kitchen purposes. The building is strictly fire-proof, of steel construction with terra cotta flooring, roof and partition. All masonry, brick and terra cotta, are laid with cement mortar, and asbestic plaster is used throughout.

The coping placed in front of the property, parts at the centre, leaving the extensive entrance to the building.

Standing in this entrance, at the foot of the steps, on an octagon granite pedestal, is the new bronze statue of Queen Victoria, with the following inscription: "Victoria, Queen, statue given by Donald Smith, the work of Princess Louise, 1895." The most striking feature of the building is the portico, composed of seven elliptical arches, resting on eight octagonal columns. This portico is surmounted by a battlement which forms a balustrade to the gallery above.

The three gables, together with the dormer and bay windows forming the facade, are effectively shown off by the dark slate roof.

Placing of Sections.

Arrangements have been made for the placing of the sections in the various McGill buildings, as follows:

Section of Surgery—Lecture Room No. 3, Medical Buildings; Anatomy and Physiology—Lecture Room No. 2, Medical Buildings; Pathology—Lecture Room No. 1, Medical Buildings; Gynæcology and Obstetrics—Lecture Room, Physics Building; Public Medicine—Lecture Room, Redpath Museum; Medicine—Convocation Hall, Diocesan College, University St.; Ophthalmology—Engineering Building, Mathematical Lecture Room; Dermatology—Engineering Building, Applied Mechanics' Lecture Room; Laryngology—Engineering Building, Mechanical Engineering Lecture Room; Psychology—Presbyterian College; Pharmacology and Therapeutics—Wesleyan Theological College.

An excellent birdseye view, by Mr. Eugene Haberer, of all the accessory buildings to the University will be distributed free to members.

Laval University.

Laval University was founded in 1852 by the Quebec Seminary. The Royal Charter, which was granted it by Queen Victoria, was signed at Westminster, on December the 8th, 1852. By the Bull *Inter varias sollicitudines*, of the 15th of April, 1876,

LAVAL UNIVERSITY, MONTREAL.

the Sovereign Pontiff Pius IX. granted it most extensive canonical privileges and powers.

According to the Royal Charter, the Visitor of the University is always the Catholic Archbishop of Quebec, and he has the right of *veto* on all regulations and nominations. The Superior of the Quebec Seminary is, by right, the Rector of the University. The Council is composed of the directors of the Quebec Seminary and of three of the oldest titulary professors from each faculty. There are four faculties: Theology, Law, Medicine and Arts.

The professors of theology are named by the Visitor; all other professors are named by the Council. The degrees to be obtained by the students in each faculty are those of Bachelor, Master or Licentiate, and Doctor.

The Laval University, at Quebec, has fine buildings, around which are clustered others of great historical and scientific interest belonging to the Seminary. The University contains very interesting museums, a vast library and choice picture galleries.

The Quebec Seminary, that owns the Laval University, was founded in 1663 by Mgr. de Laval Montmorency, the first Roman Catholic bishop of Quebec and of Canada. It was first intended exclusively for the education of priests, but soon it was divided into two parts, a grand seminary and a minor seminary—the former for the students in divinity, the latter to furnish a classical education for boys. The average attendance is over 400. The revenues for the support of those institutions are derived from a few private bequests, but principally from *seigneuries* and land properties bestowed upon the Seminary by Bishop Laval, who was personally wealthy and allied to the royal family of France. He imposed but two conditions on the Seminary: That it should maintain the foundation of the Grand and Minor seminaries; that it should furnish gratuitously board and education to twelve poor boys.

Montreal Branch.

In conformity with a decision of the Propaganda, dated February 1st, 1876, and through the initiative of Dr. E. P. Lachapelle, a branch of Laval University was established in Montreal in 1877, giving

the same instruction and enjoying all the privileges of the Mother University at Quebec.

This Montreal Branch has its new College buildings on St. Denis street, near St. Catherine street. This imposing structure was raised through the generosity of the Seminary of St. Sulpice and was built and equipped with a view of providing the students with all modern advantages in each faculty of Law and of Medicine. The style of architecture of the building is a modern adaptation of the Renaissance. It has been devised for the use of two faculties for the present, with room for the general administration. The cellar contains, as is usual in such structures, all the necessary appliances, and in the most recent and approved styles, for steam-heating, electric and gas-lighting. The ground floor is occupied by lecture rooms, museums of anatomy and the library of the School of Comparative Medicine and Veterinary Science, and it has also large recreation and club rooms, a large and commodious reading room for students, and the janitor's quarters. The first floor is devoted to the Law Faculty, the reception parlors, the rector's apartments, and a suite of study rooms for the professors. There are on this floor two amphitheatres, with a capacity of 200 to 300 seats respectively, for the use of the Law Faculty. The Peristyle, which is an imposing feature of the exterior, leads to this story. The second floor is entirely occupied by the Faculty of Medicine, and contains a general professor's parlour, laboratories and lecture rooms, also a library, and quarters for the treasurer and secretary of the Faculty. The finest rooms are perhaps a large laboratory of histology, perfectly lighted, and provided with modern apparatus for the practical teaching of normal and morbid histology. The

amphitheatre of the Primary Course, can accommodate 300 students. It can be put into direct connection with the laboratory of Chemistry. The amphitheatre for the Final Course accommodates 400 students. The Promotion Hall (third story) has a seating capacity of nearly 2000 and has been much used of late for public lectures. It is profusely lighted by electricity, and the day light is also abundant. Its acoustic and visual qualities are perfect. The proscenium is so constructed that it can be used for concerts and other spectacular performances by the students. Six large rooms, averaging 35 x 50 feet, are reserved for museums and for collections of documents. The amphitheatre of Anatomy, accommodating 300 students, is in the last story and in connection with the dissecting room, which is very spacious. The disposal of the rooms, stairways, elevator, lavatories, and other necessary conveniences is very good, and there is not a single room in the whole building which is not well-lighted. The architecture of the interior is very simple, but quite effective, especially that of the Promotion Hall.

The lectures in each faculty are private, but once a week a practical lecture is given by a professor to the general public in the Promotion Hall of the University.

The Medical Faculty of this Montreal Branch, which has now, since 1891, become amalgamated with the Montreal School of Medicine and Surgery, is attended every year by about three hundred students. The scholastic year is of nine months, divided into three terms of three months each. The teaching is given by titulary professors, lecturers and demonstrators ; the first mentioned alone being members of the Council of the Faculty. The

Faculty utilizes for its clinical work the Hôtel-Dieu Hospital, the Notre-Dame Hospital, the St. Pélagie Maternity Hospital, the St. Jean-de-Dieu Insane Asylum, the Ophthalmic Institute, and several dispensaries in the city.

The Montreal School of Medicine and Surgery, which joined the Laval Branch in 1891, was founded in 1843, and is the *Alma Mater* of the greater number of the older French-Canadian physicians.

The Faculty of Theology, belonging to the Montreal Branch, has its teaching centre at the Grand Seminary on Sherbrooke street west, and is under the supervision of the Sulpicians. As at Quebec, the Grand Seminary is more particularly for divinity students, and its actual building was constructed about 1855.

The Faculty of Arts has its quarters, partly at the Minor Seminary and partly at the Polytechnic School. The Minor Seminary is located in a fine building of recent date, and fully up to modern teaching, on the slope of the Mountain, behind the Grand Seminary. The Polytechnic School is situated at the head of Avenue du Plateau, on St. Catherine street, near St. Urbain street.

The Montreal Branch of Laval University has a vice-chancellor, who is the Archbishop of Montreal, *ex-officio ;* a vice-rector, and a board of governors. Each faculty has its own council.

Bishops College.

Bishops College was incorporated by an act of the Legislature of Lower Canada, in 1843, and was, by a Royal Charter dated 28th January, 1853, erected into a university. The design of its establishment was two-fold : 1st, to provide the Church of England, in Lower Canada, with a place in which

to educate its ministry ; 2nd, to offer to the Province a sound and liberal education upon reasonable terms. Lennoxville was selected as the site, on account of its central position in the midst of the English speaking people of Lower Canada, and of substantial offers of assistance from persons residing in the neighbourhood.

At the very outset, a school was established, which has ever since flourished, and has educated many of the leading men of Canada, and others who have become distinguished officers of the British Army. Steady progress was made in university work till 1872, when it was decided to extend its operations into the city of Montreal, by establishing a faculty of medicine there. This decision was brought about by the nucleus of a school of medicine having been formed, in 1871, by the following :—Drs. Charles Smallwood, A. H. David, Sir W. H. Hingston, E. H. Trenholme, and Francis W. Campbell. These gentlemen were accepted by the University, as its first professors, in the Medical Faculty, and to them was entrusted its completion. This task was successfully accomplished, and on the 9th of October, 1871, the first session was opened in Montreal. The appearance of this new competitor for public favour created no small excitement, especially as it was found that it had introduced, as part of its curriculum, some new subjects, and separated one or two, which hitherto had been combined. So successful was the first session, conducted in rented quarters, that its second session was opened in a building especially erected for it, and in which it to-day carries on its work. In 1896, the Dental College of the Province of Quebec affiliated with the University, and its students take the Medical Course and receive the degree of D.D.S. from it.

The Faculty of Medicine has educated a large number of men, many of whom hold distinguished positions in various quarters of the world. Many of its professional staff have been chosen to continue their work in larger spheres. The number of its students last year was one hundred and five. The University itself has made very rapid advancement during the last few years, and there is before it a brilliant future, in which its medical faculty is sure to have its share.

F. W. C.

MONTREAL COLLEGE.

OTHER CATHOLIC INSTITUTIONS.

It would only bewilder a visitor to enumerate the other Catholic educational and charitable institutions, the hotels, seminaries and convents, and to set them all in order would involve a study of the organization of the Catholic Church. Yet their very presence and complexity give a variety to the life of a city and an interest to the stranger. However, the existence of a few is noted and they give occasion for surprise and wonder at the evidences of the power and organization of the Catholic Church.

The Seminary of St. Sulpice.

The Sulpicians landed in Montreal in the year 1657. Their Superior was M. de Queylus, of the illustrious house of Lévis, and abbé of Loc-Dieu. M^lle^ Mance had already founded the Hôtel-Dieu which went into the hands of the "Sœurs Hospitalières de La Flèche" the following year. That same year (1658) Mother Bourgeois, who had been in Montreal for four years, was able at last to open her schools.

M. de Queylus, S.S., founded the parish of Notre-Dame, and the Indian Mission of Kenté, on Lake Ontario; M. Tronson, S.S., founded the one of Acadia. M. Souart, S.S., who was parish priest in Montreal, founded the "petites écoles" at the Dorval islands and the brother of Bishop Fénélon established the Indian schools.

In 1663, the Seminary of St. Sulpice obtained from the "Compagnie de Montréal" the seignory of the Island in absolute ownership, but with its debts and obligations. Thenceforward the colony remained entirely under its charge.

Towards 1671, the Mission at the Mountain was founded and a fort constructed, two towers of which may still be seen on Sherbrooke street west.

Later on, for the protection of the Indians from the excessive use of strong liquors, the Mission was transferred to Sault-au-Recollet and thence to the Lake of Two Mountains where the Nipissingues of Ile-aux-Tourtes united with the Algonquins and the Iroquois. In the closing years of French Rule, the famous abbé Picquet, S.S., founded the Iroquois Mission and the fort of La Galette, opposite Prescott, to ally the Five Nations to the French. M.

Normant, S.S., and M^me^ d'Youville undertook the direction of the General Hospital (Grey Nuns).

At this epoch the Seminary numbered forty missionaries, and ministered to the needs of all the parishes of the Island and of many others from Three Rivers and Sorel to Vaudreuil.

After Canada had been ceded to England, the Seminary of Montreal was confirmed in the possession of its lands and became the sole proprietor by a full and entire transfer from the Seminary of St. Sulpice of Paris. It attended to the spiritual welfare of the vast parish of Notre-Dame, which included all the parishes which have since been formed in the city and suburbs.

In 1840, under the ministry of the Duke of Wellington, England granted a Royal Charter to the Seminary, confirming all the right of property which it had had from the beginning. The Seminary to-day has charge of the parishes of Notre-Dame, St. James and St. Patrick, and also of the Lake of Two Mountains.

Forty Sulpicians are engaged in the service of parishes, religious communities, academies and hospitals, two of which latter have been founded by the effective corporation of St. Sulpice.

But the most important work of the Seminary is that of teaching. It owns the College of Montreal, on Sherbrooke street, founded in 1775, the Seminary of Philosophy and the Grand Seminary, in which theology is taught. These houses of higher education are admirably situated on the southern declivity of the Mountain. The collegial course of the College of Montreal includes the teaching of the Greek, Latin, French and English languages, as also literature, history, geography and mathematics. The Seminary of Philosphy

completes the work of the College by granting degrees in the Faculty of Letters and Arts of the Laval University. Philosophy and the natural sciences are the principal branches. The Grand Seminary gives a complete course of ecclesiastical sciences and grants university degrees.

These three houses instruct annually six hundred persons, and have more than forty professors; they have rich libraries, a large variety of instruments and whatever is necessary for experiments in Physics, a chemical laboratory, precious collections in natural history. They have given to the clergy of Canada and of the United States a large number of bishops and priests; to the lay society they have given many ministers, magistrates and honourable citizens.

To complete the studies in theology, St. Sulpice has established in Rome, at the desire of the Canadian hierarchy, and with the permission of the civil authority in Canada, a Seminary, absolutely its own property and under its entire direction, and which is under the protection of the English Government.

Moreover, to encourage the studies preparatory to the liberal professions, it has powerfully contributed to the establishment of Laval University in Montreal.

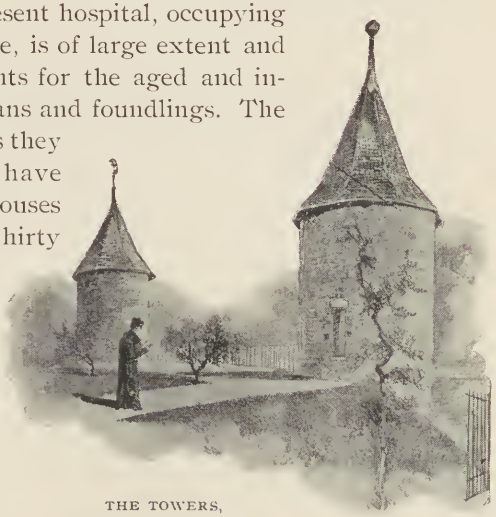
The tourist may now contemplate the magnificent results which Olier and de la Dauversière's eyes had foreseen, and which "la Société de Montréal" had eagerly hoped to see realized.

St. Mary's College is carried on by the Jesuit Fathers, and adjoins the Church of the Gesu, on Bleury street. Here twelve hundred students are assembled, and they receive an excellent classical training and some scientific knowledge.

The Sisters of the Congregation of Notre-Dame is a body of religious ladies with many institutions for the education of girls. The Order was established in 1653, eleven years after the founding of Montreal. The mother house, Villa Maria, was burned down two years ago, and only a ruin remains upon the western slope of Mount Royal. These ladies have ninety-one educational establishments in all parts of Canada and the United States. There are nearly a thousand nuns, and they have over thirty thousand pupils under their care.

The Sisters of the Holy Names of Jesus and Mary have the Hochelaga Convent for a mother house, and have thirty-six branches, teaching ten thousand children.

The Hospital of the Grey Nuns was founded in 1755, but the building itself has long since been transformed into warehouses in the heart of the city. The present hospital, occupying a whole square, is of large extent and has departments for the aged and infirm, for orphans and foundlings. The Grey Nuns, as they are called, have eight other houses in Montreal, thirty in the Province of Quebec, nine in the North-West Territories, and three in the United States.



THE TOWERS,
MONTREAL COLLEGE.

OF THE HOSPITALS.

The Hôtel-Dieu.

Montreal was founded upon a plan. There were three societies, one for tilling the soil, one for nursing the sick, one for teaching the children. With a perversity peculiar to the time, the plan was laid when there were no sick to tend, no children to teach, and an energy was spent upon these imaginary tasks, which should have been reserved for the first business of colonists.

This was in 1643, the year after the settlement. M^me^ de Bullion supplied the funds, forty-two thousand livres—the unknown benefactress—for such it was her whim to be called. Nobody was sick, yet the foundress, with a founder's privilege, would have a hospital. The colonists in vain urged her to "divert" the money to the Huron missions. Accordingly the pious task was commenced, and a building sixty-four feet long by twenty-four feet wide was erected outside the fort, near the site of the present Notre-Dame Church. It was well defended with palisades.

The Hospital consisted of two low rooms, with a chamber overhead, twenty-five feet square, having four cells and a closet for stores. For thirteen years the closet was empty. This chamber was ill

built, and that winter the snow had to be removed from it with shovels. The food would freeze on the table, and the bread had to be thawed before being cut. By a piece of extraordinary good fortune, the ecstasy of one of the nuns assumed the strange form of a transcendent skill in cookery, so that "with a small piece of pork and a few herbs she could make soup of a marvellous relish." Another sister exercised her gift, which was a very convenient one, in respect of the pigs and the hens.

Jeanne Mance was in charge, and she dominated the hospital with her tall austere figure worn with care and suffering.

Mlle Jeanne Mance.

When the Iroquois wars commenced, the little hospital did not lack "clinical material," chiefly scalp wounds. Till 1659, the lady toiled on. In that year, she fell on the ice and gave to Bouchard, the surgeon, the opportunity for a wrong diagnosis. A dislocation of the wrist was overlooked. As is still the custom in some quarters, she went to Europe for treatment, and was cured of her infirmity, while paying homage to the heart of Olier, the founder of the order of St. Sulpice. The Jesuits affected to disbelieve in the miracle, but M^lle^ Mance affirmed its truth in the strongest way possible, namely by writing an account of it with her hand which had previously been paralyzed. During this visit, she obtained twenty-two thousand francs more from "the unknown benefactress." She deposited the amount with Dauversière who appropriated it to his own use. Yet he assisted M^lle^ Mance in

bringing back to Canada "a company of the most virtuous girls she could find."

In 1695, it is recorded that two surgeons attended and divided between them the modest sum of fifteen dollars a year. In 1721, the hospital was burned, and again in 1734. When Montreal passed under British control, in 1760, General Amherst wrote "Amherst grateful to the Sisters for their care of the wounded English soldiers, sends them a couple of hundred half-dollars, and two dozens

HÔTEL-DIEU, MONTREAL.

Madeira." He accompanied the gift by assurances of regard and promises of protection.

In 1859, the present pile of buildings was erected on Pine avenue, in what was then an open field. At the same time the St. Patrick's Hospital was incorporated into the Hôtel-Dieu.

The Hôtel-Dieu contains 275 beds, and is therefore one of the largest hospitals in America. The nursing is done entirely by the ladies of the order. The revenues are derived chiefly from investments and very little from private charity. The surgeon-in-chief, Sir William Hales Hingston, has been associated with the hospital for thirty-seven years,

and has done much of the pioneer work of American surgery.

The staff is composed chiefly of the professors in Laval University, and the house surgeons are named by the community. The other members of the staff are Drs. Angus C. Macdonald, J. A. S. Brunelle, L. D. Mignault, L. A. Demers, L. E. Fortier, H. Merrill, A. Hudon, E. J. C. Kennedy, Dubé, and Asselin.

The General Hospital.

The General Hospital has, for many years, been perhaps the most popular of Montreal's numerous charities.

In the first annual report, it is stated that the increase of population and the great influx of emigrants from the United Kingdom, rendered the Hôtel-Dieu inadequate for the care of the indigent sick, and further it was desirable to accommodate patients suffering from contagious diseases.

In 1819 a house was hired as a temporary building, and in 1820 the site on which the old part of the Hospital now stands was purchased. This lot, then "in the suburbs, was chosen for its proximity to the town and the salubrity of the situation." The corner-stone of the building was laid with Masonic ceremonies on the 6th of June, 1821, and the building was opened for the reception of patients on the 1st of May, 1822, the cost of the erection being £4,556 currency. This building, which is now represented by the entrance hall and rooms above, was designed to accommodate seventy-two patients.

The subsequent history consists chiefly in the addition of block after block of buildings to the

original small stone central edifice, each addition being named after a generous donor or honoured citizen.

On the death of the Hon. John Richardson, the first president, it was resolved to perpetuate his name and connection with the Hospital by the addition of a wing to be named after him. A generous response was made by the public, and in 1832 the building attached to the east end of the original structure was opened for the reception of patients.

In 1848 the widow of Chief Justice Reid signified her intention of adding a wing corresponding with the first, to be named after her deceased husband.

Special provision was made for the treatment of children by the erection of the Morland wing, in rear of the Reid wing. This building was added in memory of Mr. Thomas Morland, an active member of the Committee of Management, and was opened in 1874. It contained rooms afterwards utilized for outdoor patients, private wards, and accommodation for servants, which was subsequently transformed to a female ward.

In accordance with the views of the founders of the Hospital, accommodation was long provided for patients suffering from infectious fevers. Cases of smallpox, typhus, scarlatina, diphtheria and measles, were for years accommodated in the central building or its wings. During the great epidemics of typhus or as it was better known ship fever, brought to the country chiefly by Irish emigrants, the Hospital capacity was taxed to its utmost, and temporary sheds had to be erected for the accommodation of the sufferers. In the years 1831-32, 1832-33 and 1847-48, 5631 patients were admitted of whom 3458

suffered from fever. Dr. Howard, in his report, states that over half the fever patients were cases of typhus.

Smallpox again, which in former years was very prevalent in Montreal, was treated in special wards of the Hospital Owing to the disease spreading to other patients a brick building, now used as a kitchen and laundry, was constructed in the rear of

MONTREAL GENERAL HOSPITAL.

the Richardson wing. Half the cost of this structure was generously donated by Mr. Wm. Molson ; the building was used for infectious cases up to 1894. At that time, after many applications and much pressure from the governors, the city undertook to subscribe $6,000 annually to the Hospital to defray the expense of providing for infectious disease. Two houses were utilised for a year in the neighbourhood, and the department was then

moved to the Civic Hospital, on Moreau street. Half this building is controlled by the General Hospital and is supported financially by the city.

The Hospital, as it now stands, has been completely metamorphosed during the past few years. Two surgical pavilions and a large operating theatre were opened for use in December, 1892. Mr. George Stephen, now Lord Mount Stephen, one of the generous donors of the Royal Victoria Hospital, contributed $50,000 in memory of the late Dr. G. W. Campbell, formerly dean of McGill Medical Faculty, and a bequest from Mr. David Greenshields of $40,000 was also utilised in adding these wings. From that time accommodation for surgical cases has been excellent. The old part of the Hospital was however in a very unsatisfactory state. The wards were small and the building antiquated. Lack of funds only had long prevented a radical change being made in this block. The present president, Mr. F. Wolferstan Thomas, set himself the task of collecting funds to renovate this part of the building and to render it in keeping with the surgical side. As the outcome of his untiring work in aid of the Hospital $100,000 was collected. The interior of the old building was pulled down and it was skillfully remodelled, under the direction of Mr. A. T. Taylor, for the accommodation of medical, gynæcological and ophthalmic patients, the old operating room being retained as a medical lecture, and gynæcological operating theatre.

The Hospital is thus now divided into a medical and surgical side. The old building contains two male and two female medical wards; the cubic capacity of the former is 31,416 cubic feet, and they are each provided with eighteen beds. The female wards are smaller, their cubic capacity being 20,100

cubic feet, and each accommodates twelve patients. In addition there are gynæcological, male and female eye wards, and a clinical laboratory.

Private wards are provided in both medical and surgical departments, the meals being provided from a special diet kitchen, which is also used to instruct the nurses in preparing invalids' dishes. The two surgical pavilions each contain two wards. Three of these are utilised for surgical cases, and the fourth has been converted to a children's ward. Each ward is designed to hold twenty-four adult patients, and the cubic capacity of each is 48,600 cubic feet. The operating room is large and capable of accommodating three hundred students.

The pathological department contains laboratories and a small lecture theatre. It has proved of much value in the scientific work of the Hospital.

The building is lighted throughout with electricity, and the various parts connected by a system of telephones.

The direction of the Hospital is under a Board of Governors, numbering almost 500, who are qualified by a donation of $100 and an annual fee of $12. A Committee of Management, including a representative of the Medical Board, is chosen annually from the governors, and they carefully supervise and direct the management of the institution.

The attending staff constitute a Medical Board, to whom are referred various professional questions in connection with the Hospital. It is composed of four physicians and four surgeons, each of whom serves for a period of six months each year. The general out-patient department is controlled by three physicians and three surgeons, each of whom attends twice weekly throughout the year. In addition there are specialists and assistant special-

ists for the eye and ear, gynæcology, and nose and throat. The appointments to the attending staff are vested in the governors; although nominally holding office for a year only and subject to annual election, changes are only made when vacancies occur through death or resignation.

The medical superintendent is appointed by the Committee of Management, and is responsible to it for the internal management of the Hospital, and he alone has the right of admitting patients. The resident medical officers are appointed annually by the Committee, on the recommendation of the Medical Board; they are seven in number, and act under the direction of the attending staff.

It was evidently the intention of the founders of the Hospital to provide for proper nursing so far as was possible, before the advent of Florence Nightingale. We read in the first annual report, among other rules, that the nurse, on admission of a patient, "shall immediately wash his or her face and hands, neck and arms, feet and legs, with tepid water; she shall give him or her (if he or she have none) an hospital shirt and night-cap." Again they are instructed to keep themselves clean and decently clothed, and to be diligent in complying with the orders of the medical officers, surgeon and matron. Surely we have here inculcated two important duties of the modern nurse, cleanliness and obedience.

In former years attempts were made to establish a satisfactory system of nurses. Women trained in England were brought out to act in this capacity. For one reason or another this arrangement proved unsatisfactory, and it was only in 1890 that the present nursing school was established. It is under the control of the lady superintendent, and has been very successfully conducted.

Each nurse enters the Hospital for a period of training extending, after a month's probation, over three years. The instruction is mainly of a practical nature, together with a few lectures from the attending staff, and class work by the lady superintendent. After leaving the Hospital, most of the members engage in private nursing, and their services are much appreciated by the general public.

A Jubilee Nursing Home, on the Hospital grounds, is now being erected. It is hoped that a few graduate nurses may be retained by the Hospital to engage in district nursing, and look after the poor in their own homes.

The number of patients treated in the wards last year was 2,716, the daily average being 1,695. In the out-patients department, there were 44,658 consultations.

The finances of the Hospital, with the exception of a small Government grant, are almost entirely provided by subscriptions or bequests from citizens. Where so many are concerned, it is impossible to here recognize the remarkable generosity of the numerous donors. It is enough to say that both rich and poor contribute, as their income permits, toward the charity.

The annual expenditure is now in the neighbourhood of seventy thousand dollars, and although the income usually falls a little short, yet the governors feel that the support of a generous public is always behind them, and that an appeal in aid of the funds will always be cordially responded to.

The following are the medical officers :—

Consulting staff : Robert Craik, M.D. ; D. C. MacCallum, M.D.; William Wright, M.D.; Thomas Simpson, M.D.; J. C. Cameron, M.D., M.R.C.P.I.; G. P. Girdwood, M.D., M.R.C.S. Eng. ; T. G.

Roddick, M.D.; William Gardner, M.D.; Frank Buller, M.D.; James Bell, M.D.; Geo. Wilkins, M.D., M.R.C.S. Eng.

Physicians: Wm. A. Molson, M.D., M.R.C.S. Eng.; F. G. Finley, M.D.; A. D. Blackader, B.A., M.D., M.R.C.S. Eng.; H. A. Lafleur, M.D.

Surgeons: F. J. Shepherd, M.D., M.R.C.S. Eng.; George E. Armstrong, M.D.; R. C. Kirkpatrick, B.A., M.D., C.M., L.R.C.S. Eng.; J. Alex. Hutchison, M.D., L.R.C.P. and S. Edin.

Assistant physicians: F. W. Campbell, M.D., L.R.C.P. London; G. Gordon Campbell, M.D.; S. Ridley McKenzie, M.D.

Assistant surgeons: J. M. Elder, M.D.; Kenneth Cameron, M.D.; Charles W. Wilson, M.D., M.R.C.S. Eng.

Specialists: John J. Gardner, M.D., oculist and aurist; A. Proudfoot, M.D., assistant oculist and aurist; T. Johnson Alloway, M.D., gynæcologist; F. A. Lockhart, M.B., assistant gynæcologist; H. Stanley Birkett, M.D., laryngologist; H. D. Hamilton, B.A., M.D., assistant laryngologist; Wyatt Johnston, M.D., pathologist.

Medical superintendent: D. D. McTaggart, M.D.

Dentist: J. S. Ibbotson, L.D.S.

F. G. F.

The Royal Victoria Hospital.

The Royal Victoria Hospital is situated on a part of the Mountain Park, and faces on Pine avenue and University street. It was founded in 1887, by the munificence of Lord Mount-Stephen and Sir Donald A. Smith, who gave half a million dollars each for this purpose.

The year 1887 was the fiftieth anniversary of Her Majesty Queen Victoria's reign, and it was in commemoration of this noteworthy event that the donors contributed the above sums. The city, shortly afterwards, gave the plot of land adjoining the Allan estate for a site for the Hospital, but a question having arisen as to its suitability for such a purpose, the donors purchased from the Frothingham estate at a further cost of $86,000 the adjoining plot of land up to University street. It is on the latter site that the building of the Hospital stands. The land granted by the city, which is twenty-five acres in extent, is tastefully laid out, and adds much to the beauty and usefulness of the Hospital. At first it was considered by many that the site of the Hospital was so far removed from the city that it would be inconvenient and undesirable.

Experience has, however, shown that the site was well and wisely chosen. The situation is unequalled, and cannot but be of great benefit in every way to the sick. Standing as it does, isolated, and on the brow of the Mountain, facing the south, there is abundance of light and air.

The Hospital was incorporated in 1890 by an act of Parliament, for the reception and treatment of sick and injured persons, of all races and creeds, without distinction. The act provides that the governing board shall consist of fifteen persons, seven of whom are to hold office in virtue of their official position and the remaining eight to be selected by the whole board.

The ex-officio governors are the Mayor of Montreal, the president of the Board of Trade, the president of the Canadian Pacific Railway, the general manager of the Bank of Montreal, the chief officer resident in Montreal of the Grand Trunk Railway,

the principal of McGill University, and the dean of the Faculty of Medicine of McGill University.

The selected governors at present are Messrs. Robert B. Angus, E. S. Clouston, Alexander Patterson, Thomas Davidson, Hon. Geo. A. Drummond, James Ross, Robert G. Reid.

Mr. Robert B. Angus is president of the Hospital. The act of incorporation gives the governors power to establish convalescent cottages at Banff, Alberta, and at Caledonia Springs, in Ontario.

The Buildings.

The style of architecture adopted is the Scottish Baronial, and the facade of the administration block is after the style of Fyvie Castle, in Aberdeenshire. Over the main arch of the doorway are the monograms of Lord Mount-Stephen and Sir Donald Smith. On the western gable of the central block appear the coat of arms of Lord Mount-Stephen with his motto "Lippen," an old Scotch word, meaning to attend. Sir Donald's coat of arms is on the eastern gable, and bears the motto "Perseverance."

The donors were fortunate in securing the services of Mr. Henry Saxon Snell, of London, as architect. Mr. Snell has made a specialty of hospital architecture; among other buildings that he has designed recently, the most prominent is the New Royal Infirmary in Aberdeen. James R. Rhind acted as assistant architect. The latter, in a recent communication, says that when Mr. Snell was appointed architect and handed the plan of the site, and when he began to consider the arrangement best suited to the peculiarities of the ground, he said it was the most difficult task he ever had to perform. The difficulties were, however, got over in a masterly manner, and were made to serve the

architect's grand design. The difficulties the architect had to surmount will be at once apparent, when it is considered that there is a difference of level of sixty-two feet between the lowest and highest points of the ground covered by the buildings.

The Hospital consists of three really separate buildings, connected together by stone bridges. Viewed from the front on Pine avenue, the Hospital appears to form three sides of a square, but it is in reality H-shaped. The central part is the administration block, while the two wings contain the wards and accessory rooms, the theatres and chemical laboratory, etc.

The central part varies in height from three to six stories. The ground floor contains the board room, the secretary's and steward's offices and a number of rooms for the resident medical staff.

The second and third stories contain the apartments of the lady superintendent, her assistant and the public and private rooms of the nursing staff. No pains have been spared to make the quarters of the nurses comfortable. The dispensary and the temporary outdoor rooms are also situated in the administration building, admission to the latter and stores department being from the rear. A special elevator runs from this floor to the kitchen on the fifth floor. The latter is a large, well-lighted room, containing a number coal and gas ranges, a large bakery oven, with separate compartments for every kind of baking. Many and various forms of steaming cauldrons and jacketted kettles are also in use.

The system of ventilation received special attention from Mr. Snell. In all the wards fresh air is admitted through gratings placed near the ceiling. The current of cold air is heated in passing over the steam coils to a temperature of about 75° or 80°.

Two series of exhaust gratings remove the foul air; one is placed near the floor, the other about six feet above it. Ducts lead from these gratings to the large flue in the centre of each wing. The smoke from the engine passes up a smoke-stack in the centre of these flues, thus ensuring the rapid and complete removal of the foul air. In warm weather, ventilation of the wards can be thoroughly effected through the windows, which reach from the floor to the ceiling, and are double, with the thickness of the wall between. The lower fourth of the outer windows, and a fan-light at the top of the inner, can be opened at the same time, thus giving abundance of fresh air without any direct draught.

The drainage and plumbing of the Hospital are as good as competent and honest workmanship could make them. The water supply is drawn from the upper level reservoir, which is over a hundred feet above the level of the Hospital. The building is heated throughout by steam generated in an engine room situated in the basement of the eastern wing. The lighting is by electricity, generated also in the engine room.

The laundry is situated in a detached stone building some distance in rear of the central block. It is operated by steam power, equipped with three steam washers, a centrifugal clothes wringer, steam mangles, steam drying closet, and a steam ironing table. Running from top to bottom of every wing is a large zinc-lined shaft, and into these the ward maids throw the linen from every ward and room. It is thus, by its own weight, collected at the basement, and from there it is an easy task to transport it to the laundry.

On the southern facade of each large ward, six in number, and between the round towers there

are balconies, where, in favourable weather, the patients can be removed and enjoy the pure air and the beautiful prospect of the city at their feet.

The Medical Pavilion comprises :

1. Three large public wards, each capable of accommodating thirty-two beds, a children's ward of twelve beds, and in addition twelve private wards and three isolation wards. The large wards are each one hundred and twenty-three feet long and

ROYAL VICTORIA HOSPITAL, MONTREAL.

twenty-three feet six inches in width. The ceiling is fourteen feet in height. The towers, which add so much to the beauty of the exterior of the wings, have been utilized by the architect for the closets and ward baths. Between the latter and the wards there is a system of cross ventilation. Off the corridors leading to each of the large wards there is a ward kitchen ; a small dining-room for patients able to move around ; also a room for the head nurse, and a room for the separation of patients who are seriously ill.

2. In the fourth story of the medical wing there are eight private and isolation wards. The latter

are so arranged that the nurse in charge can have no need of communication with either the private or public wards.

3. *The Medical Amphitheatre.*—This large room is situated on the ground floor, and is on the same level as the lowest of the three public wards. It is seated to comfortably accommodate 250 students. The area is large and well adapted for the demonstration of cases. Among the articles of furniture are a large iron screen for hanging diagrams, which has been found very useful; a revolving iron stool for the demonstration of chest diseases. A projection apparatus, made by Schmidt and Hænsch, has been found to be very useful in the clinical demonstration of disease.

4. *Clinical Laboratory.*—Two rooms adjoining the theatre are devoted to laboratory purposes. One, a small one, where the clinical clerks carry out their chemical and microscopical examinations.

There is a large room for laboratory purposes, where the resident medical staff and special workers carry out their work. It was fitted out after carefully considered plans by Dr. Ruttan. The chemical outfit, besides the usual reagents for quantitative and qualitative estimation of the products of secretion and excretion, contains an improved Sartorius balance, a polariscope (Schmidt and Hænsch's improved for sugar), various forms of gas generating appliances, Kyeldahl's apparatus for the estimation of nitrogen, a Westphal balance, an electric centrifugal machine.

A room adjoining the large clinical laboratory is utilized for the keeping of various models, instruments and appliances used in the diagnosis and treatment of disease, of which only a few of the more important can be mentioned. There is a very

complete set of Steger's plaster preparations representing the anatomy of the brain, chest, abdomen and extremities. The set includes in all upwards of thirty different casts. They have been found of great value in the clinical demonstrations. There are also several beautiful wax models of different parts of the central nervous system, made by Tramond, of Paris.

There is a very complete set of microscopes and blood examination appliances. The electrical outfit, which consists of static, faradic and galvanic machines, was made by Gaiffé, of Paris.

No reasonable expense has been spared to furnish the medical side with the most improved modern appliances for the diagnosis and treatment of disease.

The Surgical Pavilion is 320 feet long, and has accommodation, including general surgery, opthalmology and gynæcology, for 150 patients.

It comprises, first, three large wards, 123 feet by 26½ feet, each capable of accommodating thirty-two patients; one ward for twelve patients; one for eight patients; one for six patients; and one for fourteen children. There are in addition four isolation rooms and a few for private patients. Each large ward has adjoining it a bath room and lavatory, a ward kitchen, a dining room for convalescents. The same system of ventilation is carried out as in the medical department.

The Operating Theatre is situated at the rear and is capable of accommodating 300 students; there is an anæsthetic room, 26 by 10½ feet; an instrument room, a room for the preparation and storing of dressings, a room for sterilizing instruments and dressings, an after-recovery room, and a surgeon's private room. The theatre is lighted

from the roof and by a large window, extending from floor to ceiling. The floor is laid with granuloid and so graded that it can be flushed with facility. Altogether no expense has been spared to make it meet the most urgent requirements of modern surgery.

The Pathological Institute may be said to consist of a mortuary and a post-mortem theatre with its accompaniments, to comply to the fullest with the demands of modern pathology.

The building is eighty-five feet long and forty feet broad ; it is connected with the end of the medical wing by a narrow portion, 12 x 27 feet, which, upon the first floor, forms the private laboratory of the director, and upon the second is utilised in part as the connecting passage way, on a level with and leading into the main floor of the Hospital. By this passage there is direct communication with both the medical and surgical wards, so that without passing outside the building, or carrying up and down stairs, cadavers can be brought to the elevator in the pathological department and lowered there to the mortuary.

There is also an entrance to the laboratory on the ground floor, on the inner side of the building, which also leads to the passage, beneath the medical theatre, and on the outer side there is a doorway sufficiently large to permit hearses to be backed in out of public observation.

Close to the entrance hall is the mortuary proper, a room, 16 x 18 feet, with cement floor and refrigerating apparatus. The latter consists of a series of deep cupboards, between the walls of which percolates the water draining from an ice chamber above, each cupboard being provided with a sliding tray to receive a body.

The semi-circular end of this floor forms a room of seventeen feet radius, used as a waiting room for the friends of the deceased, or for services whenever a funeral takes place directly from the Hospital.

The other half of the ground floor is divided into four rooms, one of which is devoted to experimental research. It contains a water meter for running recording instruments and a centrifugalizer. A second room is a workshop and preparation room, and contains apparatus for glass-blowing for the sterilization and preparation of bacteriological media, and cupboards for storing the same, and a work bench for putting up simple pieces of apparatus.

The first floor is specially devoted to post-mortem work and morbid histology. Occupying the further end of the building is the post-mortem room, which thus secures ample light, there being a large skylight immediately above the operating table, and a large window at either side, and all around, above the amphitheatre, a series of smaller windows. There is ample floor space for the performance of autopsies, while the theatre proper is made peculiarly steep so that the students can look directly down upon the post-mortem table at as acute an angle as is compatible with comfort. Students and spectators enter the theatre from the second floor, and are separated from the pathologist and his assistants. It is unnecessary to describe the table, and the various arrangements for the examinations of tissues, flushing and drainage.

From the pit of the theatre a door leads into the preparation room, which is supplied with the necessary apparatus for cutting, mounting and examining the material obtained at the autopsy, in both fresh and hardened condition.

A certain number of students, at each post-mortem, cut and examine the removed tissues, and thus, besides completing the anatomical diagnosis of the case, gain practical instruction in the methods of morbid histology.

Opening into and adjoining the preparation room is a large chamber, well lighted on two sides, whose internal measurements are thirty-five by twenty-eight feet. Tables are placed beneath the windows of either side for the purpose of microscopic demonstration. From the further end of this room, a door leads to the private room and laboratory of the director of the institute.

Upon the second floor are the laboratories for bacteriology and pathological chemistry, and also the photographic room. Apart from the post-mortem theatre and large histology room, the institute is essentially for research and post-graduate work.

A training school for nurses is attached to the Hospital. It is under the superintendence of Miss Annie Murray. The nursing staff consists of a night superintendent, seven head nurses, thirty-one pupil nurses, seven probationers, making a total of forty-six.

The Medical Board of the Royal Victoria Hospital is: Robert Craik, M.D., consulting physician; Thomas G. Roddick, M.D., consulting surgeon; James Stewart, M.D., physician; W. F. Hamilton, M.D., assistant physician; C. F. Martin, M.D., assistant physician; James Bell, M.D., surgeon; A. E. Garrow, M.D., assistant surgeon; Wm. Gardner, gynæcologist; J. C. Webster, assistant gynæcologist; Frank Buller, ophthalmologist and otologist; J. G. Adami, pathologist.

There are in all ten resident medical officers : four each on the medical and surgical side, and one each in gynæcology and ophthalmology. The superintendent of the Hospital is Mr. J. J. Robson.

J. S.

The Notre-Dame Hospital.

This institution is situated on Notre-Dame street, near the eastern Canadian Pacific Railway station, in a populous commercial and manufacturing centre, and in close proximity to the harbour.

It was founded in 1880. The branch of the Laval Medical Faculty, established in Montreal in 1877, had no hospital, its professors and students being excluded from the Hôtel-Dieu, on account of the difficulties that had arisen between the Faculty and the Montreal School of Medicine and Surgery, the latter holding the Hôtel-Dieu. Knowing that a hospital was greatly needed in the commercial and manufacturing part of the city, and would afford abundant clinical material, the professors undertook to found Notre-Dame Hospital.

Dr. E. P. Lachapelle, taking the lead, obtained the co-operation of the Rev. Victor Rousselot, of the Seminary of St. Sulpice, who assumed half the financial responsibility of the enterprise, the professors taking the other half.

The co-operation of the Rev. Sisters of Charity (Grey Nuns) was next obtained to care for the sick and see to the internal economy of the Hospital.

The old Donegana Hotel was rented, and the contracts for repairing, renovating and furnishing the building granted ; and on the 1st of July, 1880, the Hospital, with fifty beds, was inaugurated. In 1881 it was incorporated, the corporation being under the direction of a Medical Board, a Board of

Governors and a Board of Management. Later on the Hospital became possessor of the Donegana Hotel and the adjoining estates on each side, and gradually completed the important repairs and renovations requisite to adapt those buildings to the needs of the institution.

Its presidents were successively: Hon. L. J. Forget, Hon. J. R. Thibaudeau and Mr. C. P. Hébert.

The first superintendent and adviser of the Hospital was Dr. E. P. Lachapelle, who has filled the position ever since.

The citizens of Montreal and the public generally have always contributed liberally to the maintenance of the institution. The ladies of Montreal, fully interested in the good work to be done, founded an association—The Lady Patronesses of Notre-Dame Hospital—to co-operate more effectively with the directors.

The Hospital to-day contains 125 beds, the greater number of which, 100, are devoted to the poor and unfortunate sick of all races and creeds.

Besides the wards there is an outdoor department, comprising dispensaries for general medicine, surgery, eye, nose, throat and ear diseases, diseases of women, diseases of the skin, diseases of children and nervous diseases.

In the Hospital proper, there are men's and women's wards for surgery, medicine, ophthalmology and gynæcology. There is a pathological laboratory in the hospital. An ambulance service does active work, succoring the sick and injured, and providing the Hospital with abundant clinical cases. The whole of this varied and practical clinical material is classified and utilised by the Faculty for the graded and thorough instruction of its students.

The maintenance and success of the Hospital depend upon annual public subscriptions, bequests, and charity fairs. So far, the Hospital has no endowments, but subsists on the above mentioned revenues furnished by the ever generous public of the city and elsewhere.

Western Hospital.

This hospital was brought into existence in 1871, the year in which the Medical Faculty of Bishops College was established. For some time previously the want of a hospital in the West End had been felt and spoken of, but further than this no action was taken. When Bishops Medical Faculty was in its inception, it was feared they might not get full facilities for their students in the existing hospitals. Circumstances which occured seemed to indicate that this would be realised. As a result a friend of Bishops College, Major Mills, offered to give $12,000 to build a western hospital. This donation was put in writing by Dr. Wilkins, then in Bishops, and signed by Major Mills, and an active canvass commenced. In a short time $30,000 was subscribed, the present site purchased, and on the 29th June, 1876, the foundation stone of the

WESTERN HOSPITAL, MONTREAL.

present building was laid with appropriate ceremony. It is not required to notice the vicissitudes, which the building met with, beyond stating that for several years it remained unfinished. When at last completed, the Western Hospital Corporation was not in position to commence hospital work. It was leased, in 1884, by the Woman's Hospital, the charter of which is owned by the Medical Faculty of Bishops and opened for hospital work, there being two departments—a Gynæcological and a Maternity. A most successful work was done by this hospital when, in 1895, the marked growth of the city westward seemed to indicate that the time had arrived for putting the building to its original purpose, that of a general hospital. The lease with the Women's Hospital was therefore cancelled by mutual consent, and in the fall of 1895, the Western Hospital, as a general hospital, began its active work. The ground owned by the Hospital Corporation is nearly three acres in extent, and is bounded by four streets, one being an avenue of over one hundred feet wide. This avenue leads directly to many of the large manufactories in the West End, and they furnish the Hospital with a large amount of its surgical work; in fact the Western Hospital promises to become one of the most important surgical hospitals of the city. Already there is a demand for additional accommodation, and it is pretty well understood that in the near future an additional wing will be erected, which will give a capacity of one hundred beds. The present capacity of the institution is about forty beds. The annual cost per patient is less than that of any other hospital in Montreal; the annual expenditure is about seven thousand dollars. The staff of physicians and surgeons is largely recruited

from Bishops College Medical Faculty. Two of the staff are however connected with McGill University.

The Protestant Hospital for the Insane.

The Protestant Hospital for the Insane is located on the Lower Lachine Road, about two and a half miles from the westerly termination of the Wellington street electric railway.

The Mountain, shrouded in green, is seen in the background; in front stretches the St. Lawrence with its timbered islands, and almost at the doorway are the dancing Lachine Rapids with their musical roar.

The institution, situated on a farm of 110 acres, was erected, mainly by private subscription, at a cost of some $300,000, and consists of a central building, annex and infirmary. These structures, built chiefly of stone, are lighted by electricity, and afford ample accommodation for both private and public patients. The capacity of the whole institution is 400, the present number of patients being 290.

This hospital is incorporated by special act, a permanent provision of which is that all revenues, derived from endowments, paying patients, and other sources, must be expended in the maintenance of the buildings and the inmates. The immediate management of the corporation is invested in a Board of Management.

The medical officers of the institution are: Medical superintendent, T. J. W. Burgess, M.B., F.R.S.C.; assistant superintendent, G. H. Manchester, M.D.; consulting surgeon, G. E. Armstrong, M.D.; consulting physician, F. G. Finley,

M.D. ; gynæcologist, F. A. L. Lockhart, M.B., Edin. ; pathologist, Andrew Macphail, B.A., M.D., M.R.C.S., Eng.

The Montreal Dispensary.

The Montreal Dispensary, 145 St. Antoine street (near Windsor), is one of the city's oldest charities, and is dependent chiefly upon the generosity of the citizens for support. It affords outdoor relief to the sick poor of Montreal, regardless of nationality or religion, and is advantageously situated therefor. While its natural district is "the city below the hill," where the poor abound, yet it has ever been popular in all parts of Montreal and its environs. All patients who can, must come to the clinics, but needy cases are visited at home by the staff, the institution having no beds. Last year 19,800 applications for relief received attention. To meet increasing requirements, in 1896 the building was enlarged and renovated, so that, in addition to a spacious waiting room and apothecary shop, there are seven well-equipped rooms for the physicians' use.

The attending staff is composed of: General physicians, Doctors J. H. B. Allan, E. H. Blackader, A. E. Vipond, H. Tatley, A. E. Orr, J. V. Anglin, H. B. Carmichael, A. W. Haldimand, G. A. Brown ; oculist and aurist, Dr. J. W. Stirling ; gynæcologist, Dr. A. Lapthorn Smith ; laryngologist, Dr. H. D. Hamilton ; dermatologist, Dr. J. M. Jack ; dentist, J. G. Gardner, D.D.S. ; apothecary, J. E. H. Quipp, L.P.

A consulting staff, made up of those who, in times past, have served as attending physicians, includes many of the prominent medical men in the city.

The Montreal Sick Baby Hospital and Nursery.

The Montreal Sick Baby Hospital and Nursery is on Argyle avenue. It is a useful charity, and the nucleus of what promises to be an extensive hospital for the treatment of infantile diseases, and for the study of the numerous problems which are bound up with the care of the young. The attending staff is composed of Doctors Blackader, Cameron, Reddy, K. Cameron, Evans, Martin, Macphail, Johnston and McKenzie. Dr. Ward is superintendent.

POST OFFICE, MONTREAL.

THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

On Saturday, September 23, 1843, nineteen medical men met at the house of Dr. James Crawford, on Little St. James street, and resolved to found a society "for the purpose of communicating together on subjects connected with their profession." The founders were:

A. F. Holmes, O. F. Bruneau, J. B. C. Trestler, Arch'd Hall, Hy. Mount, Wm. McNider, J. G. Bibaud, Jas. Crawford, Geo. W. Campbell, C. S. Sewell, Wm. Sutherland, Francis Badgley, Arthur Fisher, David D. Logan, Wm. Fraser, C. A. Campbell, M. McCulloch, F. C. T. Arnoldi, Peter Munro.

Only one of these, Dr. Arthur Fisher, of this city, is still living.

The name chosen for the society was "The Medico-Chirurgical Society of Montreal," and at a meeting held the following week, a code of by-laws was adopted providing for the holding of fortnightly meetings from the first of October until the first of May, and for monthly meetings during the rest of the year.

The officers consisted of a secretary-treasurer—Dr. Francis Badgley for the first year—and a committee of management of three, elected annually.

The members, in the order in which their names appeared on the roll, presided at the meetings and the president for the evening was also expected to provide the principal part of the programme.

Dr. A. F. Holmes presided at the first meeting held on October 14, 1843, and read a paper "On two cases of paraplegia," exhibiting the diseased portions of the vertebral column from one of his cases. At a meeting two weeks later, Dr. Wm. Fraser distributed vaccine virus "which had been recently taken from a cow by himself," and on December 9th of the same year Dr. Henry Mount reported upon an epidemic of Cynanche maligna (diphtheria) then raging at Coteau du Lac.

On February 17, 1844, Dr. C. S. Sewell discussed the characters of the epidemic of Influenza then prevailing, and contrasted it with that of 1837. In the discussion which followed the relatively "great prostration of muscular power," was dwelt upon by several speakers. During the first year, thirteen new members were added to the roll.

On looking through the minutes for points of interest, one notes that three cases of aortic anemysm are reported by Dr. Holmes in November, 1844, Montreal then showing the richness in this particular disease to which attention has been drawn recently. The meeting of November 30th, adjourned abruptly owing to "an alarm having been given of a riot at Griffin Town," another evidence of transmission of local characteristics.

In July, 1845, the constitution was altered to provide for a president, two vice-presidents, secretary-treasurer, and a committee of management of three, and in August, Dr. A. F. Holmes was elected the first president. During the autumn of the same year an attempt was made to form an

association of all the licensed practitioners of the Provinces of Canada, and delegates from Toronto, Niagara, Quebec, Three Rivers and Montreal, met in Montreal, but failed to come to any agreement.

A tariff of professional charges was adopted by the Society in February, 1846. All patients were divided into two classes and the twenty-four hours were divided into three portions. Day visits, 7 A.M. to 8 P.M.; evening visits, 8 P.M. to 10 P.M.; night visits, 10 P.M. to 7 A.M.

In 1847 Dr. Crawford, the second president, reported a case of perforation of the appendix vermiformis, and in the same year efforts were made by the Society to enforce compulsory registration of deaths in the city. Dr. Badgley was elected president in 1847–48, and during the year Dr. Holmes, while reporting a case, pointed out that the respiration and voice sounds were occasionally heard over an empyema in children. Drs. G. W. Campbell, Wm. Sutherland, Arnoldi, and Robt. MacDonnell then successively occupied the president's chair, and in March, 1852, the meetings ceased to be held, but from what cause is not now evidenced by the minutes.

Thirteen years later an attempt was made to carry on the Society, and a meeting of thirty French and English medical men organized themselves into a society bearing the old name. Dr. G. W. Campbell, dean of the Faculty of Medicine of McGill University, was elected president. Two vice-presidents, one French and one English, were appointed, and two secretaries, who kept the minutes, French and English, on opposite pages of the minute book, a system which evidently did not prove successful, the Society lasting less than two years on this basis. Dr. W. H. Hingston was president during

the second year, and at one of the meetings Dr. Godfrey argued from the cause of a recent epidemic, that cholera was a water-borne disease, and advocated the boiling of all drinking water as a preventive measure.

Four years later, on November 5th, 1870, the old Society was again reorganized with twenty-five members; Dr. G. W. Campbell was again chosen president and Dr. T. G. Roddick secretary-treasurer, a position which he held for five years. Meetings were held every alternate Saturday in the Natural History Society's rooms, for which the sum of three dollars a night was paid, the total amount of money disbursed at the end of the first year being $77.

In November, 1872, several cases of malaria occurring in people who had never been away from the city, were reported by Drs. F. W. Campbell and Chipman.

From the date of the second reorganization the society has grown rapidly and has now become established on a firm footing financially, and exercises an ever increasing influence on all matters pertaining to medical science. The membership as shown in the last annual report has reached a total of one hundred and sixty and the average attendance at all meetings during last year was forty-seven. The fiftieth anniversary of its foundation was celebrated by a banquet at the Windsor Hotel, on November 23, 1893.

G. G. C.

MEDICO-LEGAL MATTERS.

LEGAL STATUS OF THE MEDICAL PROFESSION.

A clause of the British North America Act, dealing with provincial, as distinguished from Federal powers, gives to the various provinces sole jurisdiction over educational matters, medical as well as non-professional.

In each case, the provinces have passed enactments governing the entrance to the profession of medicine, in some cases defining the standard required for the entrance to the study, as well as the requirements for the licence, but there has gradually been evolved a desire to find a mode whereby this provincialism can be overcome.

It is found in many instances to work detrimentally to the best interests of the profession, but it is a difficult task to secure such legislation as will meet the wishes and the demands, of so widely divergent lands as now compose the Dominion of Canada, and to induce the various provinces to part with this autonomy.

Many are not without hope that success will come, but before it transpires, local jealousies, and aspirations will have to disappear, and there will have to be gradually brought about a distinct understanding as to the requirements of entrance, and

the course of study necessary for the licence. The Canadian Medical Association has done, and is doing much in this direction.

Ontario.

In Ontario the College of Physicians and Surgeons consists of ten members, chosen from the various universities and colleges in the Province—one from each—seventeen members elected from the seventeen divisions into which the Province was divided by the Act of 1893, for the purpose of their election, and five members elected by the homœopathic practitioners of the Province. The seventeen territorial representatives are elected now every four years, by the resident practitioners of each such division, and the candidate must not only reside in the division for which he is elected, but must continue to live there during the term he represents such division.

No teacher, professor or lecturer in the Medical Faculty of any of the colleges sending its collegiate representative to the Council can be a territorial representative.

The members of the Council receive such allowances for attendance and travelling expenses as may be granted them from time to time by by-law of the Council.

The Council fixes by by-law the requirements for the preliminary examination, the curriculum of studies necessary for the examination for the licence, but graduates in Arts, in any university in Her Majesty's dominions, are exempted from the matriculation examination.

The Board of Examiners is elected annually, and consists of one member from each of the teaching bodies in the Province, and not less than six

members to be chosen from registered practitioners of the Province, unconnected with the teaching bodies.

The examinations for the licence must be held at least once a year at Toronto or Kingston.

The yearly fee payable to the College from each member is two dollars.

Up to 1895, each division of the Province had its association, and this association had the right of fixing its own fees, which tariff became law when it was submitted to the Council and ratified by them, and received the signature of the president, but the Legislature repealed this clause in the Session of 1895, and now no medical tariff of fees exists legally in the Province, but each case in court will depend largely on the discretion of the presiding judge.

The Council may admit in its discretion any duly registered practitioner of Great Britain to registration in Ontario upon such terms as may seem expedient.

No person other than a registered practitioner of the Province can practise in Ontario, and the usual penalties are exacted when a conviction is obtained.

A practitioner's name may be erased from the Register, by order of the Council, if he is found guilty of a felony or misdemeanor, or if he is guilty of infamous or disgraceful conduct in a professional respect, but he has the right of appearing before the Committee to defend himself, and he may be represented by counsel, and he may subsequently appeal to the Division of the High Court, if the decision of Committee is against him.

QUEBEC.

The College of Physicians and Surgeons is the corporate name of all the registered practitioners of the Province, each one of whom is styled a member.

It has two places of business—Montreal and Quebec.

Its affairs are conducted by a board of governors, forty in number, elected for three years: fifteen from the district of Quebec, nineteen from the district of Montreal, three from the district of Three Rivers, and three from the district of St. Francis.

Of these forty, ten are to be collegiate members: two from Laval University, at Quebec, two from Laval University, at Montreal, two from McGill University, two from Bishops College.

This board of governors of the College is known as the Provincial Medical Board, and meets twice a year to perform its functions.

This board has the power to regulate the study of medicine, by making rules regarding the preliminary qualifications, duration of study, and curriculum.

It appoints every third year four persons actually engaged in education in the Province as Matriculation Examiners, and persons desiring the licence must qualify before these examiners before entering upon their professional studies.

By an amendment passed in 1890, holders of a degree of B.A., B.S.C., or B.L., conferred by any Canadian or British university, are exempt from passing the preliminary examination.

As regards the professional requirements for the licence, holders of a degree in medicine from Laval University, McGill University, Bishops College, and the Montreal School of Medicine, are entitled to the licence by virtue of such degrees, without

examination. The same privilege is granted to registered practitioners of Great Britain, under the Imperial Medical Act of 1886. Other than the graduates so mentioned, all candidates for the licence, must pass an examination before the Board.

The Provincial Medical Board also has power to fix the tariff of fees for professional services, and such tariff must have the approval of the Lieutenant-Governor in Council, and be published in the *Official Gazette* six months before it becomes law.

The fee payable by members to the College is two dollars per annum.

No person may practise the profession of medicine in the Province who is not a member of the College, and he is liable to fine, and even imprisonment, for repeated offence. If guilty of felony, his name is removed from the Register, and cannot again be registered.

New Brunswick.

The Medical Act of this province, passed in 1881, constitutes all registered practitioners as "The New Brunswick Medical Society."

The Medical Council is composed of four members appointed by the government of the day, and five members appointed by the New Brunswick Medical Society. This body of nine members is called "The Council of Physicians and Surgeons of New Brunswick."

Students desirous of entering upon the study of medicine must pass the matriculation examination beforehand, but matriculants in Arts in Great Britain, Canada, and the United States, are exempt from such examination.

The Council may admit to registration, upon being satisfied that the candidate is a matriculant—

that he has studied at a recognized school for four years—that he is the holder of a medical degree from a recognized school after due examination, or, if not a holder of a diploma, that he has passed the examination laid down by the Council.

The Council also has power to admit to the Register, under a reciprocal clause, any registered practitioner from a province where the standard for registration is satisfactory to the Council, provided that the same privilege is accorded to registered practitioners from New Brunswick.

The registrar is obliged, under the act, to publish before the 1st of May in each year, in the *Royal Gazette* of the Province, a list of registered practitioners of the Province, as it existed on the 1st of January of such year.

The presence of such name on the Register is *prima facie* evidence in all courts that such person is entitled to practise, and the absence of such name is *prima facie* evidence as against registration, and hence it comes that by this simple provision all fees owing to the Council for yearly membership are promptly paid by the 1st of January in each year. It is an object lesson to certain other provinces where the non-payment of paltry annual dues is a serious hindrance to the work and standing of the College.

The usual penalties exist for practising without being registered.

Nova Scotia.

The Provincial Medical Board consists of thirteen registered practitioners of at least seven years standing, seven appointed by the Government, and six by the Nova Scotia Medical Society.

Students must pass the preliminary examination

required by the Board before entering upon professional studies, but matriculants of the Nova Scotia Barristers' Society are exempted from this examination.

The Board may admit to the Register any duly qualified practitioner, who is able to satisfy them that he has complied with a curriculum in all respects equal to their own standard.

The same simple process exists here as in New Brunswick, viz :—the registrar is obliged to publish annually, in the *Royal Gazette* of the Province, a full list of registered practitioners. This gazette is *prima facie* evidence of registration or otherwise, and is published before the first of August, as it existed on thirtieth day of June.

The penalty for practising without registration is twenty dollars per diem.

Registration obtained by fraudulent representation is punishable by a fine of one hundred dollars.

Registered practitioners convicted of felony in Court, or guilty of infamous professional conduct, are liable to have their names summarily removed from the Register.

Prince Edward Island.

Registered practitioners are incorporated by virtue of an act passed, in 1892, into a society known as "The Medical Society of Prince Edward Island."

The Medical Council consists of seven members elected annually by the members of the Medical Society.

Registered practitioners of Great Britain are entitled to Register upon payment of the fee.

Graduates in medicine from any university or school of medicine in Great Britain, Canada, or

from certain United States medical schools, specified in a separate schedule to the Act, who obtained their diploma prior to 1880, are entitled to registration upon payment of twenty dollars.

Other than these above mentioned, all persons desirous of registration must pass an examination before the Medical Council and must present proofs of having undergone the requisite amount of study usually required, and the Council may dispense with an examination in any case they see fit.

Since 1892, persons desirous of registering must pass Matriculation Examination equivalent to that required by the College of Surgeons, London, or must hold a first-class teachers' certificate, or must obtain from the Council a certificate of having matriculated according to the schedule provided by the Act.

Graduates in arts, or matriculants in arts, in any university in her Majesty's Dominions, are exempt from matriculation.

There is a reciprocal clause in the Act similar to that already quoted in other provinces, and amended in 1894.

The annual fee payable to retain membership in the Society and therefore to retain registration is five dollars.

The Council must provide for holding examination for the licence every three months.

The registrar must issue a correct register of licensed practitioners once in two years.

The usual penalties exist for practising without a licence and for procuring fraudulent registration, and there is the same liability to erasure from the Register in the event of a conviction for felony or for infamous unprofessional conduct.

MANITOBA.

The registered practitioners of this province are incorporated under the title of "The College of Physicians and Surgeons of Manitoba." The Council of this college consists of three members chosen from the Manitoba Medical College, two members from any medical college in the Province, affiliated with the University of Manitoba, three members from the licensed practitioners of Winnipeg, three members from each of the districts of Selkirk and Marquette, one member from each of the districts of Provencher and Lisgar.

The homœopathists are also represented on the Council in the proportion of one to every fifteen registered homœopathists in the Province. The term of office is three years. The fee payable by members of the College to the Council is from two to five dollars, according to by-law. Graduates in Medicine by examination of the University of Manitoba are entitled to registration, and a reciprocal clause exists whereby registered practitioners from other provinces may register if a similar privilege is granted Manitoba practitioners in the Province from whence such practitioners come.

The University of Manitoba is the sole examining body in medicine in the Province, and the Council of the College elect annually seven of its members to represent it on the University Council.

The registrar must publish a correct register from time to time under direction from the Council, and this register is *prima facie* evidence in all courts of registration or otherwise.

The usual penalties exist for practising without registration or for fraudulent registration, and removal from the Register follows upon a conviction

of felony or for infamous unprofessional conduct, but the person whose name is so erased has the right of appeal to any judge of the Court of Queen's Bench.

British Columbia.

The Medical Council of British Columbia is the organized body governing the profession, and it consists of seven members, elected every three years by the registered practitioners of the Province.

All persons mentioned in Chapter 48 of the British Act, 49 and 50 Vic., duly registered under the Medical Act on the 30th June, 1887, are entitled to registration by complying with the by-laws, regulations, etc., and payment of the fee.

All persons who produce a diploma from any college or school of medicine requiring a three years course, and who pass a satisfactory examination before duly appointed examiners, are entitled to registration.

The fee is fixed by by-law, and must not exceed one hundred dollars. The usual penalties exist for practising without a licence, or for fraudulently procuring registration, and a process exists for erasing from the Register the name of a felon, or one who is guilty of gross infamous unprofessional conduct.

Northwest Territories.

The organization of the profession is the same as in Manitoba, but the Council consists of five members only, and they hold office for two years. Members are not entitled to vote for members of the Council nor are they eligible for election thereto unless all their fees due to the College are paid.

All persons presenting a medical diploma from any college in Great Britain or Ireland are entitled

to registration. Licensed practitioners of the provinces of Manitoba, Ontario, and Quebec are also entitled to registration. All persons who produce satisfactory evidence of a continuous four years' study in any recognized college or school of medicine, and who pass a satisfactory examination before the Council or its accredited examiners, are entitled to registration.

The fee for registration is fifty dollars. The fee for membership is one or two dollars, as determined upon by by-law.

The usual requirements exist for keeping and publishing the Register, and the usual penalties exist for practising without a licence, or for fraudulently procuring registration, and a process is provided for erasing from the Register the name of any one convicted of felony, or for gross infamous unprofessional conduct, with a right of appeal.

R. W. P.

COURT HOUSE, MONTREAL.

BOARDS OF HEALTH.

The Board of Health of the Province of Quebec.

The Board of Health of the Province of Quebec was appointed in August, 1887, under the authority of an act passed in 1886, immediately after the severe epidemic of smallpox in Montreal. The good work of the Emergency Board created in 1885, the success it obtained against the epidemic had proved to the Legislature how useful a permanent sanitary organization would be. This epidemic had, for the province of Quebec, the same effect the cholera of 1832 had for England, it gave rise to the sanitary movement in this province.

The Board has its offices at 76 St. Gabriel street, opposite the Champ-de-Mars, Montreal. Under the authority of the Health Act, the Board has made and enforces by-laws relating to the prevention and limitation of infectious disease, the improvement of sanitation, the removal of nuisances, the sanitary conditions of factories. Since 1894, no system of water supply or sewerage can be established without the Board having approved of them, and this is also the cases since 1895 for projected cemeteries. In 1893, the Legislature consented to the law of statistics by which the data contained in the registers of civil statutes were made available to the Board,

and this was the origin of its department of Vital Statistics. In 1893, the Board established a bacteriological and chemical laboratory, where municipalities can have their work done at reasonable rates.

The Board has jurisdiction over the eight hundred and eighty-two municipalities in the province of Quebec, and it has power to require the organization of a local board in every municipality. Municipal councils are bound to execute all the regulations of the Provincial Board, and whenever the latter is not satisfied, it may cause them to be executed at the expense of the municipalities in fault.

Although the Board is attached to the department of the Provincial Secretary, the various governments which have been in power since 1887 have always left the direction of the work of the Board to its president, Dr. E. Persillier-Lachapelle, who has held the position without interruption since its organization. The Board is composed of seven members, one of whom is the president. The other officers of the Board are: a secretary, an inspector of health, a bacteriologist, a chemist, and a recorder of vital statistics.

In reference to the registration of civil status, it might be of interest to recall that the keeping of registers, by clergymen, was ordered in 1667, by Louis XIV., and that even to-day the mode of keeping them remains practically unchanged.

The Board of Health of the City of Montreal.

The Board of Health of the city of Montreal is composed, like the ordinary committees of the City Council, of seven members. The powers of the Board are, in health matters, even beyond those of the Council itself. But, excepting in time of epidemic, the actual powers exercised are not more than those of the other committees.

In time of epidemic, when such is declared by the Lieutenant-Governor in Council, they exercise their functions under a provincial act and are quite independent of the Council. But the Council has the right at any time to appoint additional members of the Board.

The Health Department staff is composed of the medical health officer, Dr. Laberge, sanitary engineer, secretary, accountant and assistant, three vaccinators and district physicians, the house physician of the Civic Hospital, who is also city bacteriologist, two milk inspectors, who are veterinary surgeons, six clerks, one messenger, twenty sanitary inspectors, one disinfector, four meat inspectors, three guardians of the public baths.

The vital statistics are compiled strictly with a view to the practical requirements of the Department.

The mean annual death rate for the decade ending 1895, was 25.93 per 1,000 of the population; mean birth rate, 42.74 per 1,000; mean marriage rate, 9.76 per 1,000.

Since last year, the registration of deaths has been done in the Health Department, special arrangements having been made to carry out the new law authorizing municipal registration in cases of death. Hitherto this work was done by the ceme-

tery authorities. The law requires the reporting of cases of contagious diseases. These reports together with the mortuary statistics guide the Department in applying measures of prevention.

Disinfection of houses is effected by means of sulphurous acid gas; clothing, bedding, etc., by superheated steam. A house of refuge for families while their houses are being disinfected is maintained.

The system of vaccination adopted for a number of years by the Department has been to obtain regularly returns of baptisms from the churches and notify the parents to have their children vaccinated within three months.

The vaccinators visit the children and vaccinate all those not already vaccinated by their family physicians. Animal vaccine alone is used. Communication is had constantly with the schools to prevent the spread of disease through their means. A civic bacteriological laboratory is now being fitted up and will tend to complete the organization of the Department.

The former smallpox hospital has been converted into a Civic Fever Hospital for cases of diphtheria and scarlatina. A small temporary pavilion has been erected for smallpox cases.

The plans for all new buildings are examined by the sanitary engineer. He also keeps a surveillance over the schools and large establishments for the same purpose.

The sanitary inspection is carried out by the inspectors, systematically, from house to house. About 49,000 regular visits are made annually. The special complaints from all quarters of the city are attended to according as they are received. About 40,000 special visits are made annually.

Total number of nuisances caused to be abated, about 45,000 annually.

Smoke and peppermint are used in testing drain and plumbing work.

The scavenging service is under the control of the sanitary engineer. The refuse is removed twice a week from the districts into which the city has been divided for scavenging purposes. The more offensive part of the offal is incinerated ; later, it is probable that the whole of the refuse will be thus dealt with.

The removal of night soil and of dead animals is done by contract. The proprietors pay for the removal of the night soil, six cents and a half a cubic foot ; the city pays six thousand five hundred dollars per annum for its incineration. The city pays eight hundred dollars annually for the removal of dead animals, and the contractor has to incinerate the residue after utilizing all he can of the animals.

There are three public baths : one for the eastern, one for the western, and one for the centre part of the city. The latter is situated on St. Helen's Island.

The milk inspectors examine the dairies and cows from which the milk supply of the city is obtained. They also collect samples of milk daily, test them, and, when found below the standard, refer them to the department analyst for analysis. When the analysis confirms the test, the dealers are prosecuted. About twenty-one thousand gallons of milk are sold daily by licensed dealers. About two thousand five hundred samples are tested annually. The prosecutions average about seventy yearly.

The average annual expenditure for sanitary purposes is about one hundred and twenty thousand dollars.

SPORTS AND PASTIMES.

Canadians have inherited the Anglo-Saxon love of outdoor sports and pastimes, and the youth of Montreal holds a notable pre-eminence in all athletic exercise.

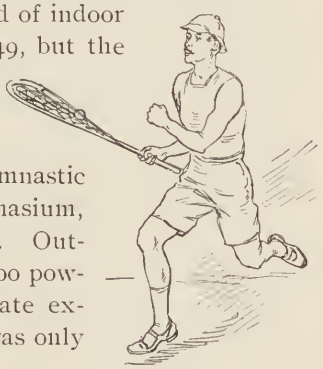
Canada has sports peculiarly her own, indigenous to the country and inherited from the ancient lords of the soil. From the ball play of the Indian the Canadian national game of lacrosse has developed, and from the snowshoe and toboggan, the aboriginal method of locomotion over the snows of winter, the white man has derived two glorious winter pastimes.

The recorded history of sport goes back to the beginning of the present century, although it is said that cricket and curling, England and Scotia's favorite sports, came into the country with Wolfe's victorious army. The Montreal Curling Club, founded in 1807, is undoubtedly the oldest organized club for outdoor sport on the American continent, and is still in hearty and active existence. There are records of cricket matches in the "thirties," but the early archives of the Montreal Cricket Club have been destroyed. Snowshoeing was organized as a pastime by the Montreal Snowshoe Club in 1840, with a continuous history and record ever since.

In 1842 the first athletic club for footracing and outdoor athletics was formed in Montreal and called the Olympic Club. It is claimed that this was the first known organization formed for footracing. The Athletic Club of Exeter College only claims to have formed the first athletic club in England in 1850, eight years after the Montreal athletes organized the Olympic. After an active existence of some years the Olympic disbanded and a number of its members founded the present Montreal Lacrosse Club in 1856.

Skating dates its organized life from 1859, the present Victoria Skating Club dating from 1862.

The year 1878 saw the formation of bicycling clubs on this continent, the Boston and Montreal clubs being founded that year, the Boston a few months the senior. Montreal, however, claims the honor of having the first rubber-tired bicycle imported to the American continent, pedaled through her streets on the first day of July, 1874, by one of the founders of the Montreal Club. The Montreal Football and Montreal Toboggan clubs date their formation from the years 1868 and 1881 respectively. It will thus be seen that organized sport in Montreal is of varied character and of very respectable antiquity. The record of indoor athletics commences in 1849, but the organization was not long lived. Another effort in 1860 proved more successful, and the Montreal Gymnastic Club finally built a gymnasium, on Mansfield street in 1867. Outdoor sport finally proved too powerful a rival for its separate existence, and the property was only



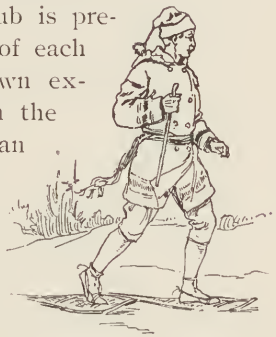
preserved from the hammer by the Montreal Lacrosse and Snowshoe clubs leasing the building for several years as a club house, and on finally assuming a mortgage of $13,000, becoming the possessors of the building. In this they were assisted by the Montreal Bicycle Club, the three clubs forming the Montreal Amateur Athletic Association in 1881. The Toboggan Club affiliated in 1884 and the Montreal Football Club in 1885.

The success of this amalgamated association has been remarkable. In five years they paid off the mortgage, owning a property valued at thirty thousand dollars, and free from debt. Since then, they have purchased two adjoining stone houses, in order to extend the club house, and large commodious grounds at Westmount, with cinder path, pavilion for six thousand spectators, club houses with dressing rooms and every convenience for the athlete of every sport, and valued at one hundred thousand dollars.

On this ground, in summer, the lacrosse, football, tennis and cricket clubs hold their practices and matches; and in winter, the snow shoe clubs their races, while the toboggan clubs run a magnificent outdoor skating rink with a membership of nearly four thousand. Here the various skating champions of Swedish, Dutch, Norwegian, American and English nationalities have competed for the world's skating championship.

The Montreal Amateur Athletic Association is an institution unique in organized sport. It is governed by three representatives from each of the

five clubs who are subdivided into chairmen of departments, such as gymnasium, reading and club room, outdoor sports, billiards, bowling, entertainments, property, and grounds. The receipts of all the clubs are pooled in the Association, yet the autonomy of each club is preserved, the interior economy of each being attended to by their own executive. The fees are within the reach of almost any young man over sixteen years of age, being ten dollars entrance and ten dollars annually, giving membership in all the clubs and entrance to their matches on their grounds.



There are also a number of connected clubs, composed from among the members, who have no voice in the management of the Association, but are organized for the furtherance of other branches of sport, among them cricket, tennis and hockey.

The mental condition of the members is not overlooked, for a reading-room, in the Mansfield Club House, is fully equipped with all the latest daily papers, magazines, periodicals, etc.

Montreal also possesses another athletic association, with handsome grounds and club house, in the northern part of the city. It is founded somewhat on the lines of the Montreal Association, and is

composed largely of Canadians of Irish descent, and is called "The Shamrock Amateur Athletic Association." The prowess of its senior club, "The Shamrock Lacrosse Club," on the Lacrosse field, has given that institution a wide prominence in that sport.

W. H. W.

The time has gone by when a man could become a *coureur de bois* at a moment's notice. To engage in the chase extensively requires a considerable outlay of time and means, and it is an enterprise not to be undertaken lightly. The grizzly bear of the Rockies, the mountain sheep of the Selkirks, the moose of the Laurentians, the wapiti of the North-West are all as inaccessible as the wild boar of the Tyrol to a peace loving practitioner of Harley street. Yet, to every visiting member, if he is a reasonable man, there is open as much killing as is good for him. Men who long to cast the angle in the brook, who love fishing and quietness have but to open their mouths and their passion will be gratified.

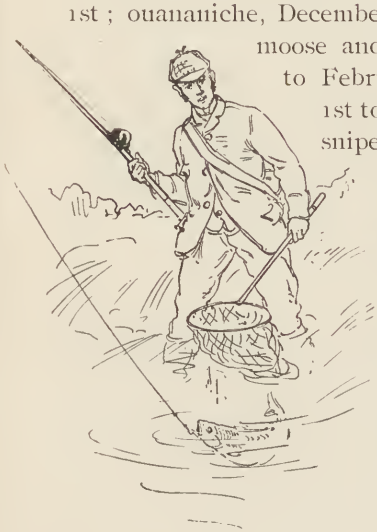
Three hours to the North of Montreal in the heart of the Laurentians, are reservoirs scooped out of the rock by the impulse of the ice. These lakes clear as crystal, are filled with water as cold as the brooks. In these lakes, the muscular trout loves to take his ease, and he will rise to a fly until his red belly gleams a foot in length above the water.

Every lake has its comfortable club house and its guides, and these clubs are open to the visiting members, who are content with a rod, a landing net, a basket and a book of flies.

But "to go a-fishing is not all to fish." There is, besides the haze of the Indian summer on the hills, the glory of the Canadian "fall," the flame and splendour of the foliage, the red and green and gold of the maple, the sumach and the beech.

The following are the open seasons during which shooting and fishing can be legitimately indulged in :

Province of Quebec :—Salmon, February 1st to August 15th ; speckled trout, May 1st to October 1st ; ouananiche, December 1st to September 15th ; moose and caribou, September 1st to February 1st ; deer, October 1st to January 1st ; woodcock, snipe and grouse, September 1st to February 1st ; duck, September 1st to May 1st.



Province of Ontario:—Speckled trout, January 1st to September 15th ; maskinonge, June 15th to April 15th; woodcock, snipe and plover, September 1st to February 1st; duck, September 1st

to March 1st; caribou, September 1st to February 1st; moose and red deer, October 1st to January 1st.

The game laws of British Columbia and Manitoba are much the same as in Ontario.

Golf.

"The Royal Montreal Golf Club" was the first instituted in America. That was in 1873. The present links are at Dixie, near Lachine. The property is newly purchased, and a club house erected at a cost of eight thousand dollars. The property itself cost twenty thousand dollars, and though the ground is new, the course and greens are in reasonably good condition. Visiting members are admitted on presentation of card, and matches have been arranged.

Hunting.

"The Montreal Hunt Club" has forty couples of hounds, and a morning's ride rarely ends without a kill. The season opens in September.

Winter Sports.

Members will miss, of course, the curling, the skating, the snow-shoe tramps over the mountain, and the swift toboggan down its precipitous sides, and all the other novelties incident to the Canadian winter.

THE CLIMATE OF CANADA.

It is believed that a reference to some of the more prominent features of our climate will not be without interest to the members of the British Medical Association, on this, the occasion of their first visit to Canada, and for that purpose, the few subjoined, necessarily abbreviated, extracts have been culled from Sir William Hingston's work on "The Climate of Canada and its Relation to Life and Health."

Looking to the extent of country which the Canadian Dominion comprises, and the diversified nature of its surface and physical characters, it should be no matter of surprise that it is subject to the most widely varying conditions of temperature, and that almost every known climatic feature, except that of the torrid zone, can be met within its boundaries. There is here the climate of the Atlantic coast, in the east; that of the genial Pacific, in the West; that of central Canada, influenced by its vast fresh water lakes; that of the prairie district, with its dryness; that of the mountainous regions, with its clear rarified atmosphere, one shading imperceptibly into the other. Over some portion of this surface may be met with any degree of heat, any degree of cold, any degree of moisture, any degree of dryness. . . . . .

The low altitude of Canada is favourable to its climate and vegetation. All the long and gentle slopes descend towards the Atlantic and the frozen zone; and all its short and rapid slopes, or counter slopes, are directed towards the Pacific, while the Rocky Mountains and the Mexican Cordilleras are placed, as it were, to modify the genial air of the Pacific, ere it reaches the central and eastern portions of the Dominion. Raise the altitude of the northern and north-eastern coasts of Canada, and lower the mountain ranges on the south and south-west, and human life would be impossible. The series of lakes and rivers exert a vast influence in modifying the climate of the country. The larger lakes—Ontario, Erie, Huron, Michigan, and Superior, have an aggregate area of 98,000 square miles, and a depth varying from 500 to 1,000 feet. Add to these the smaller lakes and the St. Lawrence, Ottawa and other rivers, and there are upwards of 130,000 square miles of water, comprising nearly one-half of all the fresh water on the surface of the globe.

The area of the Dominion is so extended that one part may be clad with perpetual snows, while another is bathed in almost perpetual heat and sunshine. One part receives the cold atmosphere of the frozen sea; another, the humid air of the Atlantic; another, the mild gentle breeze of the Pacific; yet, there is no dislocation of temperature from what is proper to each place, but each undergoes rapid modification to suit the regions for which it is destined . . . . . .

The foliage of the country ranges from the lichens, mosses, and snow plants and the curled up leaves of some of the coniferas, through every shade and variety to the large umbrageous plants of the equator . . . . . .

In its extremely northern parts, the vegetation is so stunted, that the highest tree does not reach to a child's knee, but, proceeding southward and westward, vegetable life reaches the highest state of development; majestic forests abound in every variety, proper to a temperate climate, and cereals and succulent vegetables and every variety of fruit, testify to the genial influence of the climate.....

There is everywhere an unbroken chain of vegetation, little affected, save by the degrees of latitude and longitude.

Sometimes many degrees of longitude are traversed in Canada, without observing any important change in vegetation. For instance, along the North Saskatchewan, two hours and a half behind Montreal time, vegetation is of the same general character as that of Ontario.....

The climate of Canada is much more uniform than that of Europe, and the meteorological differences are such as can be produced by position alone.

On reviewing the distinctions between these, we observe that they are mainly caused by winter. The temperature of the summer of Paris is not so wide a departure from the mean as is the winter of St. Petersburg; yet, those are the summer and winter climates which Canada, at least at Montreal, is thought most to resemble.....

While in the more temperate regions, in those parts selected by Europeans, the mixed forest is met with in rich luxuriance, as the oak, elm, beech, maple, linden, chestnut, ash, hickory, walnut and other deciduous trees. Even the wild grape is met as far north as the 52nd degree of north latitude; the Island of Orleans, below Quebec, was covered with grape vines when Jacques Cartier passed, and he gave it the name of Isle of Bacchus.....

As a wheat growing country, Canada may be compared with central Russia. From the valley of the Saskatchewan, and from far down the Mackenzie river, in the north-west to the Pacific, and along the huge chain of Canadian rivers, throughout the whole interior valley, wheat of a white and fine description is grown, inferior in gluten, only to that cultivated along the shores of the Mediterranean.

Canada, minus its lakes, is not unlike the north of Europe in being both continental and oceanic; its oceanic features, however, are limited and are soon lost in the continental, a short distance from the coast. The extreme heat of summer would give to Canada a continental climate, were it not associated with profuse rains at regular intervals, and the cold of winter, like the heat of summer, is severe without being destructive. . . . . .

Extreme cold in winter lays vegetation completely asleep and preserves it, and a thick mantling of snow covers up the roots and spongioles, and preserves their dormant vitality for use in spring. . . . . .

The changes of temperature, the variations of every kind, the oscillations of every sort, strike over Canada, as over any plane surface, with such uniformity of progression that meteorological observers, knowing what the condition of the atmosphere is at a few places, may easily infer what they have been at all. . . . . .

Europeans visiting this country cannot fail to notice a variety of features with which they are not already familiar. Not alone in the clearness of the skies; the dryness of the atmosphere; the great variety of foliage; the differences in the animals and in the feathered tribes, but they will also

observe, in the occupant of the soil, modifications of the European type—modifications due largely to climatic surroundings. . . . . .

It is almost an axiom that the mixed forests, where the hardier varieties of deciduous trees are met with are those parts where the climate is best suited for the abode of men. . . . . .

In our forests are found the trees common to all northern and temperate climes, their variety and extent being, perhaps, greater in this portion of the continent than in any other. As with the forests, so with the fauna, and as with the fauna, so also with the human species, with whom there is every evidence of health of body and of vigor of mind.

The aborigines of the country, who have occu pied the soil for untold ages, are distinguished for their splendid physique. In height, weight and strength they tower over their Asiatic ancestors. The French, who came after them, have increased, in all these respects, over their progenitors ; while those who have more recently come from the British Isles have, certainly, exhibited no signs of degeneration ; on the contrary, wherever statistics are obtainable, the commercial value of life, up to thirty-five years, is found to be greater than in Europe, and life insurance companies regulate their premiums in accordance with this fact by charging less ; but, after that age, on account of the relatively greater wear and tear of the system, especially in cities and towns, a higher premium is required. In rural districts, however, green old age is met with everywhere. The birth rate all over Canada, especially in its eastern counties, is exceptionally large, and, as a result, the death rate bears a corresponding ratio.

In separating us from the great branch of the European family, we are grateful that the steps of our forefathers were directed to a land where no disease peculiar to the country is to be encountered; where no poisonous effluvia enters our nostrils; where no venomous reptile instils its poison into our veins, but where a fruitful soil rewards the labors of the husbandman with ample returns.

ELEVATOR ON THE EASTERN SLOPE
OF MOUNT ROYAL.

OF EXCURSIONS.

A man who comes to Canada, and desires to take note of the country, had better first sit down and count the cost in time and money. Montreal is the best spot for this enquiry since all lines of travel centre there. He will quickly find that the whole region falls within a series of five excursions :

1. The St. Lawrence River, Quebec, the Saguenay and Lake St. John region.

2. The journey to the Maritime Provinces of Canada.

3. The Ottawa Valley, Toronto, Niagara, and the Thousand Islands.

4. The trip through lakes Champlain and George, through the Adirondacks and down the Hudson.

5. The great trip over the Canadian Pacific, across the Rocky Mountains to the western ocean, returning by the American Yellowstone Park and the principal cities of the United States.

It is proposed to deal with each of these excursions in some detail.

St. Lawrence, Quebec, Saguenay and Lake St. John.

First : of the journey down the St. Lawrence river past Quebec and ending in the fastnesses of the Saguenay. From Montreal to Quebec there is

choice of three routes—the Canadian Pacific Railway on the north shore of the St. Lawrence, the Grand Trunk Railway on the south shore, and the Richelieu and Ontario Navigation Company's steamers upon the river itself, in many respects the preferable route.

In connection with cost of transportation, it may be said at once that all the Canadian railways will give the members of the British Medical Association and their families single tickets for half-one fare, or return tickets for one first-class fare. The railroads in the New England States, including those coming from Boston and New York to Montreal, have granted return tickets for their lines for one fare and a third, good for three days before the meeting and three days after the meeting. The rates on the Canadian railways are good from July 1st to September 30th.

Montreal to Quebec by Water.

Those who prefer to descend the river itself will embark upon one of the Richelieu and Ontario steamers at Montreal any evening, except Sunday, at seven o'clock, and upon that day at three o'clock in the afternoon. There is yet plenty of light as the steamer launches out into St. Mary's current to see Mount Royal in the distance, Victoria Bridge spanning the river and St. Helen's Island on the right. To the extreme right is the village of Longueuil with its pretty church, and on the opposite bank Longue-Pointe, where is situated the Lunatic Asylum. This great hospital, known as St. Jean-de-Dieu, contains 1500 patients, and is under the control of the Rev. Sisters of Providence. The present buildings are temporary to replace the edifice destroyed in the fire of 1891 in which one hun-

dred patients lost their lives. New buildings in keeping with the most advanced ideas in the management of the insane are now under advisement. The medical oversight is vested in four visiting physicians: Drs. Villeneuve, Perrault, Devlin and Laviolette, and three resident physicians: Drs. Bourque, Prieur and Chagnon. A little further down is Pointe-aux-Trembles, where still remain the ruins of the stone mill built by the Sulpicians in 1665.

Then come the low, flat island of Boucherville, in shallow water grown with wild rice and reeds, the favourite feeding grounds of the black duck and the pike.

We are now approaching a locality, the richest in historic associations. The river here expands into Lake St. Peter, having a width of nine miles and a length of twenty-five.

Upon the north bank is Berthier. Upon the south is Sorel, lying at the junction of the Richelieu river with the St. Lawrence. This was the pathway by which Lake Champlain and the headquarters of the Hudson used to be reached, and also the well trod way by which the Iroquois hunting parties gained a ready entrance into Canada. It is not until Quebec is neared that the river banks begin to rise into cliffs, and twelve miles above Levis the Chaudière river bursts through the forest and leaps over a great precipice into the St. Lawrence. Thus Quebec is reached at daylight by the first route.

Montreal to Quebec by Canadian Pacific.

By this route Montreal may be left in the morning at 9 o'clock, 3.30 in the afternoon, or at 11 o'clock at night, from Dalhousie square station. The distance is 172 miles, the time occupied six hours.

The East End station, now being constructed at the corner of Berri, Craig and Lacroix streets, is a four-story building, with a central tower of six stories, which is one hundred and thirty-six feet above the curb. The building is of slow burning construction.

Montreal limestone is used up to the second story window sills, and Scotch fire-brick, with limestone quoins and band courses, to the roof.

The building is of the French Renaissance design, at the time of the Old Chateau style. The front, on Craig street, is three hundred feet long, with two projecting gables.

Between and under these gables, on the ground floor, is the portico, two hundred and twenty-seven feet long by sixteen wide, consisting of twenty-one elliptical arches, crowned with a limestone balustrade which incloses a spacious gallery.

The corners of the building are finished with turrets, corbeled from the wall, which run two stories high.

The roof will be of black slate, studded with stone and copper dormer windows, all together forming a beautiful sky-line.

The interior will be plain but very substantial. White Italian marble will be used on the ground floor, laid with ashler joints. Quarter oak will form the trim and wainscot. The hotel portion will be painted.

The entire upper floors will be of Douglas fir with oiled and waxed margins for the use of rugs instead of carpet.

Leaving this station, the route is northward through Hochelaga—the old Indian name of Montreal before it became known as Ville-Marie. The Island of Montreal is left behind, and the river

dividing it from the mainland—a branch of the Ottawa—is crossed at Sault-au-Récollet, so-called from the drowning of two Récollet Fathers at this point. At St. Martin's Junction the main line from Quebec to Vancouver is reached.

Let us for the present turn eastward. An hour's run brings us past places bearing the names of a galaxy of saints to Joliette Junction. One of the most interesting points on this portion of the Canadian Pacific route is St. Léon Springs, where the famous medicinal waters of that name are obtained. The springs are about five miles from Louiseville station, and stages meet all trains. Good hotel accommodation will be found here. Until Three Rivers is reached, ninety-five miles from Montreal, the route lies through a typical French-Canadian country between the St. Lawrence and the Laurentians, a level plain, well tilled, with the narrow farms running from the river to the hills.

Three Rivers lies at the junction of the St. Maurice, opening by three channels into the St. Lawrence, and is a place of some considerable size. This was a trading station from the beginnings of Canada, and the principal link in the chain of seignories which extended from Quebec to Montreal. Then, as now, it is at the head of the tide-water of the St. Lawrence, and was the gateway for the treasures of the Upper St. Maurice, then, moose and beaver skins, now lumber and speckled trout. A mile or two below is Piles Junction, from which a branch line extends northward to the Shawanegan Falls, in spring a torrent of size and beauty, but in the autumn a thin veil of water falling over a precipice. The country onward is purely French, dotted with thrifty villages and bearing such names as Champlain, Batiscan, St. Anne-de-

la-Parade, Grondines, Lachevrotière, Portneuf, St. Bazile and Lorette, the abode of the last of the Huron Indians who were driven by the Iroquois to find shelter beneath the walls of Quebec.

To this day the traveller may witness the spectacle which Marie-de-l'Incarnation saw, "a poor man with eight children and more running about with barehead and barefeet and a little jacket on their backs, living on nothing but bread and eels, and on that diet growing fat and stout."

Montreal to Quebec by the Grand Trunk Railway.

The third and only remaining route is by the Grand Trunk Railway. It is worth pausing here to note a few facts in connection with this road.

The Grand Trunk Railway System is the pioneer line of the Dominion of Canada, and one of the earliest pioneers of railway enterprise on the American continent, for the oldest Systems in the world were but in their early infancy when the charter of the Grand Trunk Railway was granted, in 1851. Within two years, the line from Montreal to Portland, a distance of two hundred and ninety-seven miles, was opened; the line from Richmond to Lévis (Quebec), ninety-six miles and a half being added the following year. The main line from Montreal to Toronto was opened in 1856, and the Sarnia Division in 1858. The prodigious advance of Chicago and other western cities, as important centres of inland traffic, in the decade 1870-1880, did not fail to impress upon the directors the importance of acquiring direct connection with the western roads centering in those cities, and in consequence, in 1879, the Chicago and Lake Huron Line was absorbed into the System, thereby making

a direct highway from Chicago and the Western States to the Atlantic seaboard.

From this time forward, various tributary and contiguous lines were gradually acquired, till the amalgamation of the Great Western Railway, in 1882, and the Northern Railway of Canada, and the Hamilton and North-Western Railway, in 1888, formed the line universally known as "The Grand Trunk Railway of Canada," embracing a total mileage of 3,506 miles, exclusive of the Chicago and Grand Trunk Railway; Detroit, Grand Haven and Milwaukee Railway; Toledo, Saginaw and Muskegon Railway; and the Cincinnati, Saginaw and Macinaw Railroad; which, by their consolidation under one management, now form the Grand Trunk Railway System, with a total mileage of 4,186 miles.

The Grand Trunk Railway System embraces in its many ramifications the greatest diversity of natural attractions on the Continent, and the travellers in its superbly equipped trains, over its unrivalled roadbed, are treated to a magnificent panorama of ocean, lake and river scenery in all their charms of roaring surf, and stupendous cliffs; wooded islands and sheltered bays; deep gorges, circling rapids and thundering falls; peaceful woodlands and snow-capped mountains; smiling vineyards and prosperous towns; dense forests and grassy glades, in all their primeval beauty, culminating in Nature's grandest creation—Niagara Falls.

"Bonaventure" station, the terminal of the Grand Trunk Railway System in Montreal, was erected in 1887–88, and opened for business in the latter year. It is favorably situated in the very heart of the city, and is a handsome structure, built of red pressed brick, somewhat in the Italian

Renaissance style. The building has a frontage of 240 feet by a depth of 100 feet.

The Grand Trunk Railway System may justly claim that its connections between the east and the west sides of the St. Clair, Niagara and St. Lawrence rivers are made by four great monuments of engineering triumph—the St. Clair Tunnel, the International Bridge, the Niagara Suspension Bridge (now replaced by the new single arch steel bridge), and the Victoria Tubular Bridge (now being enlarged and rebuilt).

The great St. Clair Tunnel, under the St. Clair river, connecting Port Huron, Mich., with Sarnia, Ont., dispensed with the tiresome and inconvenient system of ferry transfer between those points, and its construction marks an era in the history of the Grand Trunk Railway, and was no small factor in the consolidation of the Canadian and Western divisions of the System. When it is considered that the St. Clair river is about forty feet deep and half a mile wide, and that it is the sole channel through which lakes Superior, Huron and Michigan discharge their surplus waters into Lake Erie, the magnitude of the scheme, and its successful completion, confer a well-earned celebrity on its chief engineer, Mr. Joseph Hobson, now chief engineer of the entire system. The tunnel proper is 6,026 feet in length, and including the approaches, 11,553 feet, marking it as the largest sub-marine tunnel in the world. The time of construction was a little over two years, and the cost was about $2,700,000.

The tunnel was opened for freight traffic on October 27, and for passenger traffic December 7, 1891.

With the Victoria Tubular Bridge at Montreal, which, at the time of its construction, was called the

"Eighth Wonder of the World," may properly be classed the "Magnificent Suspension Bridge" at Niagara. However, yielding to the demands of large and ever increasing international traffic, the Suspension Bridge which so amply fulfilled the requirements of the past, has yielded place to a beautiful single arch steel bridge which now gracefully spans the stupendous gorge of Niagara river. The new bridge is a single arch of 550 feet, supplemented by a trussed span at either end of 115 feet length.

VICTORIA BRIDGE, MONTREAL.

With the approaches the total length of the bridge is 1100 feet, and the centre of the arch is 226 feet above the water. The bridge has two decks or floors. On the upper floor there are two tracks for railway purposes exclusively, while the lower floor contains a wide central carriage way, a double trolley track and foot paths on each side. As an evidence of the wonderful strength of this light and airy structure, the arch will support on each upper track at the same time two locomotives of the

heaviest kind, hauling trains weighing 3500 pounds to the square foot of bridge surface, and in addition a load of 3000 pounds per square foot on its lower floors. At the official test made on Thursday, July 29, 1897, the structure was subjected to the combined weight of 2500 tons, and the deflection at the centre of the bridge was but seven-eights of an inch.

The Grand Trunk Railway has recently come under a new management, which is bringing it into line with the best that is being effected in railway control.

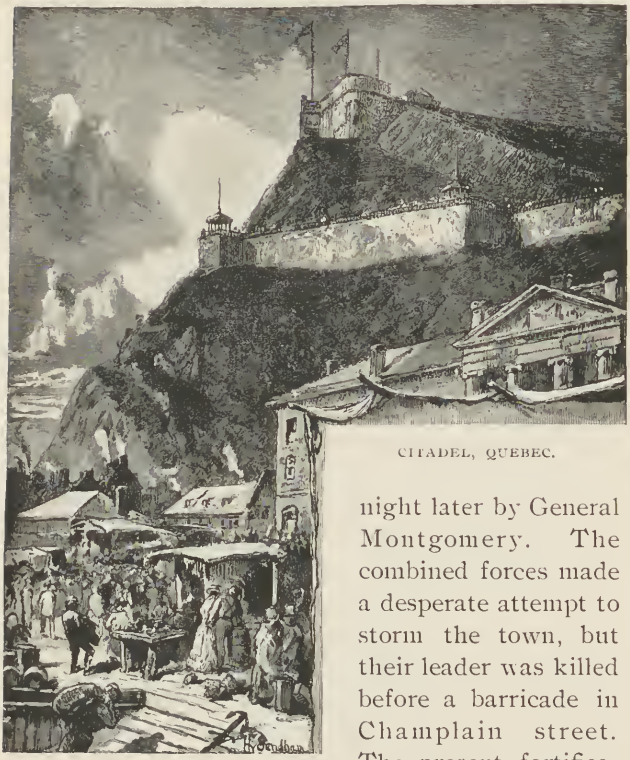
You may leave Montreal in the morning or in the evening, and cross the Victoria Bridge from the Island of Montreal. The journey is for the most part through a fertile and commodious land, and brings one to Lévis, opposite Quebec, in about six hours.

Quebec.

Of the making of guides to Quebec there is no end. Instead of adding to their unnecessary number the following may be reproduced from the Preliminary Programme :

Quebec stands upon the site of the Indian village of Stadacona which Jacques Cartier found at the time of his first visit, in 1535. It was not till 1608 that Quebec was really founded by Champlain. Henceforth its history was one of sieges and warfare. In 1629 it was captured by Captain Kirke, but it was restored three years later. In 1690 and 1711 it withstood two unsuccessful attacks. Ever since 1769 the city, citadel and colony, gained by the memorable victory of Wolfe, have remained in British hands.

During the wars of the American revolution, General Benedict Arnold, after a famous march, appeared under the walls, and he was joined a fort-



CITADEL, QUEBEC.

night later by General Montgomery. The combined forces made a desperate attempt to storm the town, but their leader was killed before a barricade in Champlain street. The present fortifications were built from 1820-1830, but there is no attempt to keep them in adequate repair. If necessary, however, the position could be made impregnable. No one who visits Quebec can realize that he is eight days' sailing from Europe, for he beholds a city more Catholic than the Pope, more French than St. Malo, in Brittany—a fragment of the old world hidden away in this corner of the new.

If one climb the steps of Champlain from Lower Town, observing the foreign names, the unusual cast of countenance and colour of the "habitants," and if he persevere till the eminence is reached, upon which stands the strongest citadel in America, he will be rewarded by a prospect of matchless beauty. At his feet is the mighty river, on its way from Niagara to the sea, and upon its further banks Pointe Lévis, as strongly situated as Quebec. Upon the left hand the Falls of Montmorency drop like a curtain adown the face of the cliff a good three hundred feet. Upon the right are the memorable Plains of Abraham, where Wolfe sealed with his blood the covenant which gave to England this great heritage.

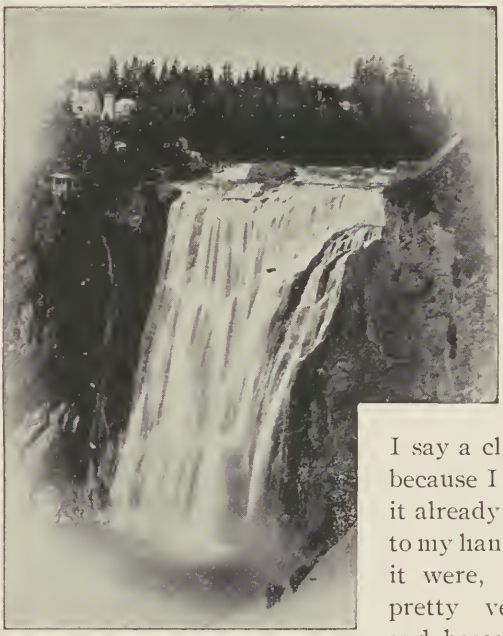
Quebec appeals to one by reason of the fine romance of her past, her historic associations, the picturesqueness and strength of her position. The harbour affords ample space for a fleet to manœuvre and the warships of the North American Squadron frequently visit it. Ships sail from here to the ends of the earth laden with lumber, and the variety of the craft gives to the scene an additional touch of foreign colour.

Until the year 1893 the people of Quebec permitted their mediæval habits to extend to the hotels, but now the Chateau Frontenac is as fine a hostelry as could be desired. It is entirely in keeping with its surroundings, being erected upon the site of the old Chateau St. Louis, and some of the old stones are actually incorporated into its building. By employing one of the many local guides to Quebec, a visitor may in a few hours visit the spots where the destiny of a great country was visibly worked out.

A visit is to be made to the Falls of Montmorency, seven miles down the river, of which let Mr. Howells speak :

"The lofty bluff was scooped inward from the St. Lawrence, in a vast irregular semicircle, with cavernous hollows, one within another, sinking far into its sides, and naked from foot to crest, or meagrely wooded here and there with evergreen. From the central brink of these gloomy purple chasms the foamy cataract launched itself, and like a cloud,

"Along the cliff to fall, and pause and fall did seem."



MONTMORENCY FALLS.

I say a cloud, because I find it already said to my hand, as it were, in a pretty verse, and because I must needs liken Montmorency to something that is soft and light. Yet a cloud does not represent the glinting of the water in its downward swoop; it is like some broad slope of sun-smitten snow; but snow is coldly white and opaque, and this has a

creamy warmth in its luminous mass; and so there hangs the cataract unsaid as before. It is a mystery that anything so grand should be so lovely, that anything so tenderly fair in whatever aspect should yet be so large that one glance fails to comprehend it all."

Quebec has also its medical school, besides being the seat of the College of Physicians and Surgeons, the licensing body of the Province. Here is Laval University, instituted in 1852 by royal charter from the Queen and papal charter from Pius IX., in further development of the Grand Seminary founded by Laval in 1663. The University building is large and spacious, with a library of more than 85,000 volumes. Its medical school is, however, relatively small, and has suffered from the establishment of a Montreal branch of the University. There are four hospitals, two—the Hôtel-Dieu and the General Hospital, founded in the seventeenth century; the other two—Marine and the Jeffrey Hale.

Miracles are performed at many places in the province of Quebec, but the wonders which are done at St. Anne-de-Beaupré overshadow all the rest. This sacred shrine was visited last year by 127,418 pilgrims, and the percentage of cures was very large. The right radius with the scaphoid and semilunar bones of St. Anne were deposited at this shrine by Pope Leo XIII. in 1892, but the custody of the sacred relic has been transferred to the Church of St. Jean-Baptiste, East Seventy-sixth street, New York, where it is now on loan. A novena was held in New York prior to the feast of St. Anne, 28th July, of which Father Tetreau wisely remarked: "We do not lay so much stress upon the cures worked by the relic as we do upon the religious character of the celebration."

MOUNT ST. ANNE, BELOW QUEBEC.
FROM THE ST. LAWRENCE.

LAKE ST. JOHN AND THE SAGUENAY.

Quebec is the starting point for the rest of the excursion to Lake St. John and the Saguenay. If one does not visit these places it will be to him a matter of life-long regret. The Saguenay is as distinctively a show-place of the earth as the Rhine, the Inland Sea of Japan, or the Fiords of Norway.

The Lake St. John Territory extends from the head of navigation of the river Saguenay, at Chicoutimi, to the northern boundary of the province of Quebec, a distance of two hundred and twenty miles, and from the sources of the waters flowing into Lake St. John, from the east, to the river St. Maurice, and embracing the valley of the river Batiscan, a distance of two hundred miles, the whole forming an area of forty-four thousand square miles, or about twenty-eight million acres. Comparatively little is known of this great country, with the exception of the valley of Lake St. John, which, within the last few years, has been colonized with great rapidity, and now contains a population of some forty thousand.

The journey may be made in a circuit to Lake St. John, Chicoutimi down the Saguenay to Quebec, or in the reverse order. The round trip costs ten dollars.

The present project is to pass from Quebec to Lake St. John, and thence to Chicoutimi on the Saguenay, by rail, and down the Saguenay by daylight, and back to Quebec by water, by the steamers of the Richelieu and Ontario Navigation Company. Passengers leave Quebec at 8.40 any morning, except Sunday, and arrive at the Roberval Hotel, Lake St. John, a distance of one hundred and

ninety miles, at 4.55 in the afternoon. After a rest of two hours, they then proceed eastward to Chicoutimi, sixty-four miles, at the head waters of the Saguenay. The run down the Saguenay occupies five hours, and another night is consumed in reaching Quebec.

The railway from Quebec passes through the heart of the Laurentians, a geologic formation

CHICOUTIMI, SHOWING ST. ANNE, SAGUENAY RIVER.

which is the foundation of the world. It was in rocks of this formation Sir William Dawson discovered the *Eozoon Canadense*, the oldest known form of animal life. In the saxicava sand of this region fossils have been found corresponding with living molluscs in the Greenland seas.

The road crosses the St. Charles river, and soon comes in view of the ruins of the chateau of the Intendant Bigot. Next the Jacques Cartier river is

crossed, noted for its rapids and salmon, and a stop is made at Lake St. Joseph, where one sees revealed upon the receding hills the full splendor and glory of the Canadian autumn. The largest and also the most picturesque village on the route is St. Raymond, hemmed in by hills, with a river running through its streets. Fifty-eight miles from Quebec is Rivière à Pierre, and near it the Lower Laurentian Railway crosses the line to Lake St. John. This road is intended to form a link with a line being built from Parry Sound, on the Georgian Bay, to Ottawa and thence to Quebec, the intention being to afford an outlet for the wheat of the great West, that is now conveyed as far as Duluth by the western roads of the United States.

Proceeding northward, a sportsman would soon find the place where he desired to be, as indicated by the Batiscan river. The road follows its course for twenty miles, past cascades and rapids with alternating stretches of deep still water.

Lac des Grandes-Isles, now known as Lake Edward, is the next considerable body of water. It is like so many of the Laurentian lakes, rather a reservoir fed from the bottom by bubbling springs, always cold and clear, with the great trout lurking in its coolest deepest spots.

"The trout of Lake Edward are exceedingly brilliant in colour, much more variegated than the ordinary fish of the species, and in size have been taken approximating five pounds in weight, while still larger specimens have been seen time and again. The numbers of trout wrested from these waters almost surpass belief, and great big fellows can be seen in the clear water, moving about carelessly and lazily, tantalizing the angler as he sits in his boat."

At a hundred and twenty-six miles from Quebec, the crest of the Laurentians is reached, one thousand five hundred feet above the level of the sea. Henceforth the rivers flow northward. Then the train goes flying down the grade, hugging the sides of the mountain, or bridging a ravine and

TADOUSAC, FROM SAGUENAY RIVER.

again winding about the face of some dizzy precipice. At length, the great inland sea is reached.

The discoverer of Lake St. John was Father Jean De Quen. This was in 1647, and he reached it by way of the Saguenay. The "Relations des Jésuites" give this description of it: "This lake is so large that it is difficult to see the opposite shores. It appears to be of a round shape; it is deep, and swarming with fish. Pike, perch, salmon, trout, doré, whitefish, carp, and several other kinds, are caught in it. It is surrounded by a flat

country, terminated by high mountains at a distance of three, four, or five leagues from its shores. It is fed by the waters of about fifteen rivers, which serve as highways to the different little nations that live in the lands whence they flow, by means of which they come to fish in the lake, and to interchange articles of commerce and friendship with each other."

Hotel Roberval, at Roberval, Lake St. John, is open from June to October, and accommodates 300 guests. This hotel has all modern conveniences, is lighted by electricity, and is built on a commanding site, affording a magnificent view of the whole expanse of Lake St. John. Almost in front of the hotel is the steamboat wharf where tourists may embark on the steel passenger steamer "Mistassini" making daily trips and excursions to all points on Lake St. John during the tourist season. The Montagnais Indians, whose village is a short distance from the hotel, are available as canoemen and guides, and their bark canoes and intimate knowledge of all the best sporting localities around the lake are at the service of guests of the hotel.

The Trappist Monks have an establishment on the Mistassini river. These monks, whose order enjoins perpetual silence, devote themselves to agriculture, and have already turned a forest into a centre of colonization, a large number of settlers having followed them into the wilderness. The steamer "Le Colon" runs to this colony, leaving Roberval Tuesdays and Saturdays at 8.30 a.m., and returning to Roberval at 4 p.m. on Wednesdays, and at 6 p.m. on Sundays.

There is another branch of this order at Oka, near Montreal, where one may still witness the practice of mediæval austerity, labour, fasting, si-

lence, and castigations. Their only relaxation is on Friday, when they chastise themselves with a leathern whip.

Six miles from the Hotel Roberval are the famous Ouiatchouan Falls by which Lake Bouchette gains entrance to Lake St. John over a precipice 236 feet high. The Lake is fed by over twenty rivers bearing euphonious Indian names, such as "River where they Hunt the Moose," "River of the Big Rock," "River of the Great Killing."

Lake St. John is as famous for its ouananiche as Florida for its tarpon. He is a rash man who would add anything to what Mr. Chambers has said of the ouananiche. He has spoken what is to be hoped is the last word, but "Experienced anglers declare that no other fresh-water fish, excepting perhaps the salmon, afford so much sport to the fly fisherman as the ouananiche, because when impaled on a fly-hook, it fights nearly as much in the air as in the water."

From Lake St. John, the journey is eastward to Chicoutimi, at the head waters of the Saguenay, seventy miles from its mouth. The steamers of the Richelieu and Ontario Navigation Company connect here for Quebec, and convey the passengers down this "river of death," as Bayard Taylor calls it. These are really magnificent river boats, comfortable to luxuriousness in respect of rooms, saloons and table. The following quotations indicate the impressions which have been made upon the minds of some who have visited the region :—

W. H. H. Murray : "It is a monstrous cleft opened by earthquake violence for sixty miles, through a landscape of mountains formed of primeval rock. In old time, a shock which shook the world burst the Laurentian range asunder at its

St. Lawrence line, where Tadousac now is, and opened up a chasm, two miles across, two thousand feet in depth, and sixty miles in length, straight northward. Thus was the Saguenay born."

Charles G. D. Roberts: "The Saguenay can hardly be called a river. It is rather a stupendous chasm, from one to two and one half miles in width, doubtless of earthquake origin, cleft for sixty-five miles through the high Laurentian plateau. Its

TADOUSAC HOTEL, TADOUSAC, P. Q.

walls are an almost unbroken line of naked cliffs of syenite and gneiss. Its depth is many hundred feet greater than that of the St. Lawrence; indeed, if the St. Lawrence were drained dry, all the fleets of the world might float in the abyss of the Saguenay, and yet find anchorage only in a few places."

The Times: "It is Nature's sarcophagus; compared to it, the Dead Sea is blooming; talk of Lethe or Styx, they must be purling brooks compared with this savage river."

Truly, the gloomy chasm between the two majestic rocks, Trinity and Eternity, merit all these hard words.

Tadousac, at the mouth of the Saguenay, was the first landing place of Jacques Cartier in Canada, and from that time to this it has been the centre of legend and story of Indians and Jesuits, fur trading and smuggling.

Heading up the river we come upon many pretty watering places, Cacouna, Murray Bay, Bay St. Paul, which are much sought out every summer. The steamer proceeds to Quebec and upon the way every Gallic saint has yielded a name for the towns and villages along the river-side ; for all this region is French and intensely Catholic. All the way up, the river banks are marked with high uplands, covered with dark forests of hemlock, fir and spiked pine, and down by the water are pretty villages, indicated from afar by their churches, chapels and convents with shining roofs of tin. Here and there a river, which in any other country would be called mighty, falls over the bank and loses itself in the great St. Lawrence. The water is now wholly sweet when the Island of Orleans is reached ; beyond it the Citadel of Quebec lies along the sky-line, and the ship is moored in the shadow of the Plains of Abraham.

The Maritime Provinces.

From Quebec, daily trains run over the Intercolonial Railway to the Maritime Provinces. These places can also be reached over the Canadian Pacific Railway, which runs direct from Montreal to St. John and Halifax. The return fare is $16.50 to Halifax, to St. John $14.50.

Halifax possesses the oldest Canadian, if not the oldest colonial, branch of the Association. It is beautifully situated, and in a centre from which

can be visited the Annapolis valley, the bay of Fundy with its wonderful tides, Cape Breton and the Bras-d'Or lakes.

St. John also stands on the sea, where the St. John river empties, and is one of the best winter ports in Canada.

The Ottawa Valley, Toronto, Niagara and the Thousand Islands.

Attention is next invited to the excursion up the Ottawa Valley to Toronto and Niagara Falls, returning down the St. Lawrence through the Thousand Islands to Montreal.

From Montreal to Ottawa the distance is 125 miles, the fare $3.50. Four trains a day leave Montreal, besides a steamer.

Ottawa has a noble and commanding situation at the junction of the Ottawa and Rideau rivers. The site and scenery approach those of Quebec in beauty. Ottawa is the capital of Canada and the centre of the lumber industry. The Parliament buildings form an imposing pile upon the edge of the cliff, and the Library well deserves inspection.

From Ottawa to Toronto the distance is 256 miles, the return fare $7.85.

Toronto is second in importance amongst the cities of Canada. It is of comparatively recent growth, for only a hundred years has elapsed since its proper foundation. In 1749 a French trading post was established on its site under the name of Fort Rouille. In 1792 Governor Simcoe, then newly arrived, established his government at Niagara, but next year he crossed the lake to seek a more commodious location, and the site of old

Fort Rouille found favour in his eyes. He pitched camp upon the shore, and at once set his men to clearing a path through the wilderness. This road now bears the name of Yonge street, and upon it were built the residence of the Governor and the Parliament buildings. The infant colony bore and withstood all the vicissitudes incident to early settlement, conflicts from within and conflicts from without, hunger and distress and want of all things.

THE "QUARTERS" CHANNEL, NEAR JONES' FALLS, ON THE RIDEAU.

In 1812 there was a call to arms and for three years the little settlement stood at defence.

Toronto, to-day, has a population of 188,000, and in its general arrangement resembles the smaller cities of the United States. The notable feature in its building is the University, one of the finest pieces of college architecture in America. It is rich in endowments, its faculties of Medicine, Arts, Law, Science and Theology are well filled and it extends a wide educational influence over Ontario.

There are four public hospitals in Toronto—the Toronto General, with over three hundred beds, supported by the City and the Province ; St. Michael's, with two hundred beds ; the Western Hospital, recently organized, and the Children's Hospital, having one hundred and fifty beds.

The Medical School, associated with the University of Toronto, exacts a course of four years of eight months, leading up to the degree of M.B. ; the doctorate is given at the end of an additional year, either for original investigation or after an examination in clinical medicine and clinical surgery.

From Toronto a three hours journey may be made to London, an ambitious town of 30,000 inhabitants, with a Thames, Westminster, Blackfriars Bridge, Hyde Park, Covent Garden, and Crystal Palace. There is a good hospital and a large lunatic asylum. It is the seat of the Western University, with a small medical school.

From Toronto a very profitable excursion may be made to the Muskoka Lakes. The region known as "Muskoka Lakes" is a collection of lakes and islands in Northern Ontario, one hundred and twelve miles from Toronto and one hundred and forty-five miles from Hamilton, on the line of the Northern Division of the Grand Trunk Railway; the point of destination by rail is Gravenhurst (Muskoka Wharf), where close connection is made with the boats of the Muskoka Navigation Company, and it is but a day's journey from Toronto or Hamilton to the farthest stopping place on the lakes.

Scattered over the surface of these lakes there are upwards of four hundred islands, some bare, rugged rocks rising sheer from the water's edge ; others, and these the most numerous, are densely

covered with thick growths of pine, balsam, cedar, beech, maple, and oak.

The shores of the lakes are deeply indented with bays and inlets, forming hundreds of miles of picturesque coast line, and affording countless nooks and harbours. The rugged, rocky shores are in many places relieved by smooth stretches of sandy beach, allowing of safe bathing.

To hunters it is a paradise, deer, bear, fox and partridge abounding, while the gamiest of trout and bass and the weightiest of maskinonge are the delight of all who tempt its waters with rod and line.

Gravenhurst is worthy of mention, as the site for the new Consumptive Sanitarian. This decision is of itself a sufficient recommendation to all those troubled with asthma and lung complaints to seek this health-giving region for recuperation.

Niagara Falls.

From Toronto, it is only a few hours sail across Lake Ontario to Niagara-on-the-Lake, where the Niagara river enters. The journey may also be made by rail. Directly opposite is old Fort Niagara, on the American side. It was here that La Salle, the pioneer of the Great West, in 1678, erected a pallisaded stone house, whilst he was building the "Griffin," the first vessel which ploughed the waters of Lake Ontario.

The steamer proceeds up the river to Queenston, near which are the heights of Queenston where, in 1812, there was a bloody affray between the Canadians and an invading American force. The invaders were defeated, but Sir Isaac Brock, the leader of the Canadians was killed. A fine monument marks the spot where he fell.

The approach to Niagara is now through the most carefully cultivated garden of Canada, a land of grapes and peaches and apples, and of all fruits good to the sight or taste. All these things mask its awful grandeur, yet one cannot but imagine the feelings of awe and reverence it inspired when the only approach was by a bridle path through the primeval forest, the tumult of the waters increasing at every step. We do not wonder then that the

SPOT WHERE SIR ISAAC BROCK FELL AT QUEENSTON HEIGHTS.

ground whereon we now stand in careless criticism was to the Indian holy ground, a place of pilgrimage, a fitting place for the yearly sacrifice of what they prized most, the favourite daughter of the tribe. Once a year, a frail canoe with the burden of a chieftain's daughter was launched upon the cataract, with much lamentation and the singing of the death song. Since that time all is changed, save the glory of the cataract and its eternal smoke and thunder.

It is worth introducing here an account of the impression which this stupendous spectacle produced upon the mind of Charles Dickens :

"I could see an immense torrent of water tearing headlong down from some great height, but had no idea of shape, or situation, or anything but vague immensity. It was not until I came on Table Rock and looked—great Heaven, on what a fall of bright green water!—that it came upon me in its full might and majesty. Then, when I felt how near to my Creator I was standing, the first effect, and the enduring one—instant and lasting—of the tremendous spectacle, was Peace. Peace of mind, tranquility, calm recollections of the dead, great thoughts of eternal rest and happiness; nothing of gloom or terror. Niagara was at once stamped upon my heart, an image of beauty; to remain there changeless and indelible, until its pulse cease to beat forever. Oh, how the strife and trouble of daily life receded from my view, and lessened in the distance, during the ten memorable days we passed on that enchanted ground! What voices spoke from out the thundering waters; what faces, faded from the earth, looked out upon me from its gleaming depths; what Heavenly promise glistened in those angels' tears, the drops of many hues, that showered around, and twined themselves about the gorgeous arches which the changing rainbows made! . . . . . To wander to and fro all day, and see the cataracts from all points of view, to stand upon the edge of the great Horseshoe Fall, marking the hurried water gathering strength as it approached the verge, yet seeming, too, to pause before it shot into the gulf below; to gaze from the river's level up at the torrent as it came streaming down; to climb the neighboring heights and watch it through the trees, and see the wreathing water in the rapids hurrying on to take its fearful plunge; to linger in the shadow of the solemn rocks three

miles below, watching the river as stirred by no visible cause it heaved and eddied and awoke the echoes; to have Niagara before me lighted by the sun and by the moon, red in the day's decline, and grey as evening slowly fell upon it: this was enough. I think in every quiet season now, still do these waters roll and leap and roar and tumble all day long. Still are the rainbows spanning them a hundred feet below. Still when the day is gloomy do they fall like snow, and when the sun is on them do they shine and glow like molten gold. But always from its unfathomable grave arises that tremendous ghost of spray and mist which is never laid; which has haunted this place with the same dread solemnity since darkness brooded on the deep, and that first flood before the deluge—light—came rushing on creation at the word of God."

The falls of Niagara afford an outlet for the waters of lakes Erie, Huron, Michigan and Superior into Lake Ontario. They are situated upon the Niagara river, about midway between the lakes. The descent is three hundred and thirty feet in thirty-six miles. The main cataract is divided by Goat Island into the American fall, one thousand and sixty feet wide and one hundred and sixty-seven feet high; the Canadian or Horseshoe fall, three thousand and ten feet in contour and one hundred and fifty-eight feet high, which transmits nine tenths of the water. The volume per minute is estimated at fifteen million cubic feet.

The water passes out of Lake Erie in a swift flood which becomes more gentle as the channel widens. Seven miles above the falls, the rapids commence, and in the last mile the river descends fifty-five feet in a whirlwind of eddy and surge which is wonderful and bewildering. Then, as if

it felt the approach of the cataract, it breaks into a chaos of waves. At the very brink, there is a pause, then the glossy rounded river hurls itself into a gulf of mist and noise with the splendour of water when it is at its finest. The whole spec-

NIAGARA FALLS.

tacle is more beautiful than terrible. The channel now contracts gradually into a space of two hundred and fifty feet, and the trouble increases. As one third of the fresh water on the globe tries to emerge, the river is forced up into convex form, the centre being thirty feet higher than the sides. Thence it proceeds on its way to Lake Ontario and the sea.

The gorge has been formed by the action of the water, and the falls are receeding at a rate of nearly

two feet a year, as the limestone wears away, and the underlying shale is mined by the water. Geologists are in the habit of using the recession of the falls as chronometer for the age of geologic formations.

Just above the falls is a series of small islands—Bath, Goat, Luna, Three Sisters and the Little Brother. One may descend the Biddle Stairs to the Cave of the Winds, where the visitor is escorted along a ledge behind the cataract, to a point where he has the rock at his back, and the whole volume of Niagara thundering within a few feet of his face. There he will be choked and blinded and deafened in a tumult of water and wind, to a most unreasonable degree.

Table Rock is also to be visited. An elevator carries visitors to the bottom, where all the surroundings are very inspiriting.

The river is spanned by three bridges, two for railways and one for foot and carriage passengers. One is an exceedingly graceful structure and "droops from its slight towers like a garland." The structure which it replaces was carried away bodily by a storm in 1889. The bridge has a span of 1268 feet and is 190 feet above the water.

An attempt much more magnificent in its prospectus than in its results is being made to "develop" the power which is "going to waste" at the Falls.

There is an admirable electric tramway service to all points of view, and both guides and carriages may be dispensed with.

There was a time when the cabmen of Niagara were robbers, and the curio-dealers thieves in league with them, but since Niagara and its approaches were rescued by the governments of Ontario and New York, and erected into an International Park,

they have amended their conduct, though there are occasional reversions to their old instincts. The only fare that is necessary is 25 cents for crossing the Suspension Bridge, a dollar for the Cave of the Winds, 50 cents for the descent from Table Rock, and 50 cents for a trip in the "Maid of the Mist." The hotels are good on either side, the rate being from three to four dollars a day.

The return journey from Toronto to Montreal may be made by the Canadian Pacific, the Grand Trunk Railway, or by the Richelieu and Ontario Company's steamers. The fare is five dollars, the distance three hundred miles. If the river route be chosen, the sail is first along Lake Ontario till Kingston is reached.

Kingston occupies the site of the old French fort Frontenac, and for three years was the capital of Canada. It is a pleasant, well situated city, the home of many retired officers and Government officials, and is the seat of Queen's University, directed by Principal Grant. The Kingston Medical School is affiliated with it. The hospital has of late been greatly improved and enlarged.

The immediate interest in Kingston is that it lies at the head of the Thousand Islands. They really number 1600 and are merely pieces of the Laurentian System, which here crosses the St. Lawrence to join the Adirondacks, protruding through the softer Silurian. In respect of these islands, Charles Dickens exercises his gift after this manner:

"The beauty of this noble stream at almost any point, but especially in the commencement of the journey, where it winds its way among the Thousand Islands, can hardly be imagined. The number and constant succession of these islands, all green

and richly wooded ; their fluctuating sizes, some so large that, for half an hour together, one among them will appear as the opposite bank of the river, and some so small that they are mere dimples on its bosom—their infinite variety of shapes, and the numberless combinations of beautiful forms which the trees growing on them present—all form a picture fraught with uncommon interest and pleasure."

When Prescott is reached the trouble in the water begins, first the Galops, then the Iroquois, and most important the Long Sault where, for twelve miles, the whole water of the upper lakes comes tumbling over the rocks and pitches the steamer downward forty-eight feet. Now the land on either hand is Canadian, and the boat descends the Coteau and Cedar rapids, Split Rock, and the Cascades into Lake St. Louis, a descent of eighty-two feet in twelve miles.

Here is the head of the Island of Montreal, the village of St. Anne, where the waters of the Ottawa join with the St. Lawrence. They join but do not mingle, and for thirty miles they flow side by side, the clear blue of the St. Lawrence easily distinguishable from the light gray of the Ottawa.

Lake St. Louis crossed, the steamer plunges down the Lachine rapids, beneath the Canadian Pacific Railway bridge, through a howling wilderness of water. At length, she glides past Nuns' Island, and under the Victoria bridge, into the harbour of Montreal.

Lakes Champlain and George, the Adirondacks, and the Hudson.

For those whose time is limited, a very admirable short trip is through Lake Champlain, Lake George, the Adirondacks, and down the Hudson river to New York. This would consume only two days. The details are as follows :—From Montreal to Plattsburg by Delaware and Hudson Railway, from the Grand Trunk station ; by steamer to Fort Ticonderoga ; by rail to Baldwin, on Lake George ; by steamer to Caldwell, at the south end of Lake George ; by rail to Saratoga Springs, thence to Albany, and down the Hudson by steamer or rail.

The reasons in favour of this trip are its convenience, cheapness and comfort, the beauty of lakes Champlain and George, and the Adirondacks. The Hudson, from Albany downward, is as distinctive of America as is the journey, from Cologne to Coblenz, of Europe.

Besides, places of great historic interest are passed, notably Fort Ticonderoga, where Champlain first terrified the Iroquois by his arms, and where later Montcalm and Abercrombie met in battle. The old fort is not yet in hopeless ruins, and well reveals the plan of fortification adopted in those days.

This is a thoroughly well equipped tourist line. The railway service is of the best, the steamers are well found, and the hotels are the best of their kind.

An all rail journey may be made through the Adirondacks by the New York Central Railway. Trains leave the Windsor depot twice a day, connecting at Albany for New York.

WESTWARD TO THE PACIFIC.

The fifth excursion is the great journey across the Continent to the Pacific Ocean, over the line of the Canadian Pacific Railway. Without this journey no adequate notion can be formed of the extent, diversity of scenery or the resources of Canada.

The man who named the gateway to the upper waters of the St. Lawrence La Chine, builded better than he knew, for to-day it is the opening to the Imperial highway from England to the Orient.

A railway between the two oceans, all the way on British soil, was long the dream of a few, the hope of many. Upon the confederation of the provinces, in 1867, it became a political necessity. Accordingly the Canadian Pacific Railway Company was organized in 1881, and immediately entered into a contract with the Government to complete the line within ten years. The Company was to receive twenty-five million dollars and twenty-five millions acres of farming land. The last rail was laid 7th November, 1885, and instead of ten the whole contract was finished in four years. At the close of that year the Company, not yet five years old, possessed 4315 miles of railway, including the longest continuous line in the world, extending from Quebec and Montreal across the Continent to the Pacific Ocean, a distance of three thousand and fifty miles: by the midsummer of 1886 all this vast system was fully equipped and in working order. The justice of the undertaking was proven and its success assured by the instant development of traffic, and the next few years were marked by the establishment of the Company's steamship service to Japan and China, by the addition of a line eastward

from Montreal, across the State of Maine, to a connection with the railway system of the Maritime Provinces of Canada, affording connections with the seaports of Halifax and St. John; one from Sudbury, to Sault-Sainte-Marie, at the outlet of Lake Superior, where connection is made with its two American lines leading westward to St. Paul and Minneapolis; another to Duluth, at the western

ALBERT CAÑON,
ON THE CANADIAN PACIFIC RAILWAY.

extremity of Lake Superior, and still another, westward from Toronto to Detroit, connecting there with lines to Chicago, St. Louis, and all of the great Mississippi Valley. To-day the company controls over six thousand miles of railway and is the largest corporation of the kind in the world.

The Windsor Street Station, on the corner of Osborne and Windsor streets, was built by the Canadian Pacific Railroad some nine years ago. The entire building is of massive construction of picked face lime stone from the Terrebonne quarries. The style of architecture Romanesque, is the best of its kind. The beauty is in the fine composition and proportion, notably of the tower. The interior is finished in Byzantine character. The whole structure is without ostentation and depends for its charm upon simplicity and strength.

From Montreal trains are sent upon this long journey every morning, except Sunday, at 9.50. The return fare is $70.45. The sleeping car costs $20.00 extra. The distance from Montreal to Vancouver is 2906 miles, the time occupied is five days. The mid-continental part of the lines begins at Fort William, at the head of Lake Superior, 1000 miles away. From Montreal to that point the traveller has choice of two routes. He may go, either by Grand Trunk or Canadian Pacific railways, to Toronto and turn aside to Niagara Falls; he may then go northward by Grand Trunk railway and join the main line of the Canadian Pacific at North Bay. He may journey four hours from Toronto to Owen Sound, from which place one of the Company's Clyde-built steel steamships will take him across Lake Huron and through the Straits of Sault-Sainte-Marie, where he will be lifted by an enormous lock to the level of Lake Superior, and then

across this fresh-water sea to Fort William, on Thunder Bay, and there he will join the line again.

If this route is chosen one may, for the present, miss the Ottawa valley and the Thousand Islands. The details of this excursion have already been given. Speaking generally, this second alternative route is preferable, since time is saved. Many of the places in the previous excursion are visited, and the two days' sail over the great lakes makes a pleasant contrast with the railway journey, and in no other way can such an impression of the vastness of the country be obtained.

If the part water route is chosen, however, one misses the land view of Lake Superior and its northern coast, a land of noble forests and mountains, rich in the wealth of woods and mines, a wilderness of rocks and ravines, a most savage scenery. Hour after hour the train holds its way, now creeping close to the lake, gliding through tunnels and rock-cuttings, over embankments, bridges and viaducts, again it breaks into the wilderness, miles away from the water, and at least a mile above it.

At the end of the lake we come upon the wide emerald-green waters of Thunder Bay enclosed by abrupt black-and-purple basaltic cliffs on the one side, and by hills rising roll upon roll on the other. Here the Kaministiquia river, broad, deep, and placid, emerges from a dark forest and joins the waters of Lake Superior, giving little token that but a few miles back it has made a wild plunge from a height exceeding that of Niagara itself.

Though we are a thousand miles from Montreal, Port Arthur, at the head of the lake navigation, is the centre of a world of commerce in minerals and metals, timber and flour. Here there are

numerous saw mills, flour mills, grain elevators and granite quarries.

From Rat Portage, the new gold fields of the Lake of the Woods, Rainy Lake, Seine River, can be reached by steamer.

Four hundred miles from Port Arthur, and Winnipeg is reached. It was through this country of rocks and ravines, and foaming cataracts and rapids, Lord Wolseley marched his troops in 1870, to the Red River. Winnipeg stands midway on our journey,

THREE SISTERS, ON THE CANADIAN PACIFIC RAILWAY.

on this side of the great wheat fields of the world, and at the receipt of all its custom. This is Fort Garry, transformed to a modern city.

The Rocky Mountains are yet a thousand miles away beyond the prairies which we are now about to cross. For two days the rails extend straight westward, towards the setting sun. In fifty-six miles Portage-la-Prairie is reached ; in eighty more Brandon, a city of warehouses and elevators, and railways leading north and south.

We are now well upon the prairies, great steppes succeeding each other till the mountains are reached, the soil deep and black and yielding of its own motion every food which can be grown in

temperate climates. Three hundred and sixty miles from Winnipeg, Regina is reached, the capital of Assiniboia and the headquarters of the North-West Mounted Police. This police, picked, mounted and disciplined, by their wholesome fame have regulated these vast territories for years. The early days of settlement were therefore attended by none of the lawlessness and violence which have darkly marked the opening of new districts elsewhere in America; since the days of the Iroquois, probably no such small body has ever exercised so wide a control.

The country now has a frontier appearance, the farms in scanty clusters, and here and there large establishments where farming is carried on in an extensive way. Here is a country to delight the heart of a sportsman. Snipe, plover and curlew throng in the grass, prairie chickens and antelopes on the higher ground, and wild fowl blackening the surface of the lakes. This frontier appearance is further marked by the presence of Indians, a gloomy remnant of "Adam's degenerate seed." Descending the valley of the Saskatchewan, Medicine Hat is passed, two thousand miles from Montreal, in the midst of a magnificent ranching district, with coal beds and wells of natural gas. We are now amongst the foot hills, a goodly and pleasant land, and when Calgary is reached the prairie journey is over. But there are other things demanding attention. The Rocky Mountains are in view, their white peaks looming through the mist or gleaming in the sun, their base a blue wall that seems impenetrable. Suddenly a gap is reached, and between two vertical walls the train enters the Rockies. This is the time to gaze and wonder; on every hand are snow-laden peaks and castellated promontories, shining pin-

nacles and alcoves in a mass of fantastic shadows and battlemented walls reaching up to the edge of some massive glacier.

"These mountains are tremendous uplifts of stratified rocks, of the Devonian and Carboniferous ages, which have been broken out of the crust of the earth and slowly heaved aloft. Some sections, miles and miles in breadth, and thousands of feet thick, have been pushed straight up, so that their strata remain almost as level as before; others are tilted

C. P. R. HOTEL AND BOW VALLEY, BANFF.

more or less on edge (always on this slope, towards the east) and lie in a steeply slanting position; still other sections are bent and crumpled under prodigious side-pressure, while all have been broken down and worn away until now they are only colossal fragments of the original upheavals."

In the midst of all this is situated the Banff Hotel.

This hostlery comes within the first class in respect of comfort, healthfulness, and the scenery which the pinnacles, peaks and lakes compose. It would be a grievous mistake to pass by and not take advantage of all that it offers. There are hot and

cold springs, pure and medicinal waters, sport and exercise, rest and quiet, more lakes, more peaks, more snowy ledges. Thirty miles from Banff is Laggan, the station for the Lakes of the Clouds, and at an elevation of a mile above the sea, in another hour, the summit of the Rockies is reached. From this point streams flow east and west and following a cañon, we enter the famous Kicking Horse Pass, then comes into view Mount Stephen, holding on its shoulder a glacier eight thousand feet above the sea. For miles the road crosses ravines, pierces promontories, winds by pretty lakes, and then enters a hideous gorge which opens into the valley of the Columbia. The Selkirks are beyond. We climb slowly up till the Glacier House is reached, at the foot of Sir Donald, a pyramid of rock rising two thousand feet towards the sky. Continuing, the Columbia river is crossed a second time and we pause on its eastern bank at Revelstoke, because we are at the point of departure for the great gold mining region of Canada. The Canadian Pacific Railway Company has offered to members going to the coast, free transportation over all its branch lines in British Columbia as well as in Manitoba and the North-West Territories.

The mining camps should therefore be visited, for in promise and in fact the riches of this country equal anything of which we have knowledge to-day. From Revelstoke to Vancouver is less than four hundred miles, through the Eagle Pass, along a cluster of lakes, past Kamloops, into the great cañon of the Fraser river where the scenery is wilder than ever, the shadows denser, the mountains more tumultuous, with a serrate row of peaks—Baker, Tacoma, Hood and Shasta to the southward. By noon the strenuous air of the mountains gives

way to the soft salt breezes from the Pacific. Soon afterwards the train rolls into Vancouver and the long journey is at an end. Yet the journey is only commenced, and if one wishes to go far afield, Japan and the wonders of the Orient are only fourteen days sail away, over the wide Pacific with its low dull skies and its sailless expanse of water.

From Vancouver you may take shipping to the ends of the earth : to Yokohama, the ports of Japan and China, in the magnificent "Empress" steamers of this same company ; to Honolulu and Australia, or up the Coast to Alaska, to the golden Klondike.

The Yellowstone Park.

But the more modest journey and the one with which we are more immediately concerned, is the return through the United States territory by way

CRATER OF GIANT GEYSER, YELLOWSTONE PARK.

of the Northern Pacific and the Yellowstone Park. After crossing to Victoria, a thoroughly English city, if you are tired of mountains, you may sail down Puget Sound and join the Northern Pacific Railroad.

PULPIT TERRACE, YELLOWSTONE PARK.

The feature of this trip is the Yellowstone Park. It embraces an area of about fifty-four miles in width and sixty-two miles in length, and was set aside by act of the United States Congress of 1872, and devoted in perpetuity to the use and pleasure of the people as a National Park.

The stopping point is Livingstone, and five dollars will take you to the Mammoth Hot Springs.

From here the transportation is by stages for five days, the total fare from Livingstone being $49.50, including board at the Park hotels, during which time the following places are visited : Norris, Lower and Upper Geyser Basins, Yellowstone Lake, Grand Cañon and Falls of the Yellowstone.

Truly this is the wonderland of the world. A region of mountains and cañons, rivers and cat-

aracts, springs cold and hot, geysers and volcanoes with all manner of strange beasts, bears, buffalos, elks, deer, antelopes and whole flights of eagles. It is as if nature had gathered in small compass all things that might show her works and delight the eye of man.

Coming eastward the traveller is lost. He may return by St. Paul and Sault-Sainte-Marie and join the Canadian Pacific again at no extra cost, or he may wander southward to Chicago, Washington, Baltimore, Philadelphia and New York.

If you have done all this, you may go home and write a book bigger and better than this. You will have stored your mind with views and visions which, for the rest of your appointed time, you may call up for your own delectation and for the wonder of your friends as you enjoy the delicacy of your own fireside in some sweet English home.

Additional Information.

Other publications and all necessary information will be obtained at the reception rooms, which are in a large tent and an extensive suite of rooms in the Arts Building at McGill University. There, members and guests will register and obtain their cards admitting them to the various sections and meetings, and there will be also post, telegraph and telephone offices, counters for the distribution of tickets and invitation cards for the various entertainments, cloak rooms, office for sale of railroad and steamboat tickets, smoking and retiring rooms. There, also, will be distributed each morning the daily programme.

JUBILEE YEAR.

Public attention is drawn to the fact that the year 1897 is the golden jubilee of the oldest, largest and most prominent life assurance institution in the Dominion, the Canada Life Assurance Company.

The Canada Life Building, at Hamilton.

Founded in 1847, conducted on sound, conservative, British principles, this company has for many years held the leading place in Canada. Its established reputation, its steady progress, its absolute security and its large profits paid to its policyholders have given it a unique place in public estimation.

Its three handsome and commodious buildings in Montreal, Hamilton and Toronto, which we reproduce on this and the following page, are substantial evidences of the stability of the Company and are well worthy of a careful inspection by the public.

The Canada Life Building, at Toronto.

THE CANADA LIFE ASSURANCE CO.'S BUILDING,
AT MONTREAL.

THE SUN LIFE ASSURANCE COMPANY OF CANADA.

The Sun Life of Canada has gradually come into prominence, and is now one of the most prosperous and progressive of Canadian life companies. Its business career throughout has been marked by steady progress, and, of late years, has advanced by leaps and bounds. It now does more new business annually than any other Canadian company. Its various forms of policy contract are of a most attractive nature and are designed to meet the various circumstances and needs of its patrons. The head office of the Company is situated at 1766 Notre-Dame street, Montreal, and its headquarters for Great Britain, where a splendid business is being secured, are at 42 Poultry, London, E. C., while branch offices have been opened in all the principal towns throughout the Kingdom. Within the last two years the Company has likewise extended its business to the United States, with very encouraging results.

The Sun of Canada enjoys an enviable reputation among all who have had business relations with it for fairness and liberality in all its dealings. The profits paid to policyholders are generous, and the Company is constantly being complimented for the promptitude with which claims are settled and paid. This is due to the fact that the directors and principal officials are men of tried business ability and sterling integrity. Mr. Robertson Macaulay is president; the Hon. A. W. Ogilvie, vice-president; T. B. Macaulay, secretary and actuary; Geo. Wilkins, M. D., M. R. C. S. Eng., medical referee, and James C. Tory, superintendent of agencies.

BUILDING AND HEAD OFFICE
OF THE
SUN LIFE ASSURANCE COMPANY OF CANADA.

SHOOTING THE LACHINE RAPIDS.

Table of Contents.

Antiseptics in Ointments.

When studying Bacteriology in McGill University, Montreal, under the eminent Professor Osler, seventeen years ago, the author of Pheno-Banum recognized the need of a more reliable method, of dressing suppurating sores and wounds, than obtained by the Ointments then in use, finding the microbes were largely *protected* from the effect of *any germ destroyer* the Ointment *contained*, by the presence of *oil* or *grease* in any form.—This is more recently confirmed by Breslauer and Koch, and points to the necessity of a preparation that can be relied on. A radical departure from all other Ointments has been made in the composition of Pheno-Banum as is readily seen by the formula, here given : "Phenol," "Olibanum," "Myrospermum peruiferum," "Myrospermum tolutanum," "Benzoin" and "Colophony," which are combined in such a manner as to render it wonderfully efficient ; yet mild enough not to injure the most delicate tissue ; it has been named Pheno-Banum, and registered, merely to protect against substitutes, when prescribed, as an *anodyne dressing* which *destroys all microbes* with certainty.

It is being brought before the notice of the British Medical Association, hoping the *results secured*, (in the hands of such Medical Men as have tried it,) will cause the Profession to *investigate* and *adjudicate* as to its claim of being a reliable Antiseptic, Resolvent, Anodyne, Styptic and Healing Dressing, worthy of recognition.

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" " 18	LAKE HURON.	" Oct. 6
" " 25	LAKE ONTARIO. . . .	" " 13
" Oct. 2	LAKE SUPERIOR . . .	" " 20
" " 16	LAKE WINNIPEG . . .	" Nov. 3
" " 23	LAKE HURON.	" " 10
" " 30	LAKE ONTARIO. . . .	" " 17
Fri. Nov. 5	LAKE SUPERIOR . . .	Sat. " 20

Steamers sail from Montreal at daybreak on the advertised date, passengers embarking evening previous, after 8 o'clock.

The above arrangement is subject to change, notice of which will be promptly given to agents, and passengers who may have been booked accordingly.

For further information apply to any local agent or

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