

ANAESTHESIA IN CANADA, 1847-1967:  
I. THE BEGINNINGS OF ANAESTHESIA IN CANADA\*

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THE CANADIAN MEDICAL PROFESSION has more than one reason for celebrations during 1967. The Centennial of Confederation is a fact already known. But 1967 also marks the one-hundredth anniversary of the foundation of the Canadian Medical Association, the centenary of the discovery of antiseptics by Lister, and the one-hundred-and-twentieth year of the first use of anaesthetics in Canada.

Historical facts transmitted verbally soon become legends because they quickly begin to lack authenticity. Historical facts reported in writing and not invalidated or refuted at the time they took place are certainly nearer to veracity. Browsing among old books and old medical journals, gleaning from old newspapers, I finally found a reliable answer in my search for the first physicians who used and administered anaesthetics in Canada.

As a starting point, let us remember that sulphuric ether was first used clinically on October 16, 1846, by William Thomas Green Morton (1819-1868) at the Massachusetts General Hospital in Boston, when Dr. J. C. Warren removed a tumour from the jaw of his patient Gilbert Abbott, and said these historical words: "Gentlemen, this is no humbug." James Young Simpson (1811-1870) used chloroform for the first time on November 4, 1847, in Edinburgh, and chloroform was first given in London at St. Bartholomew's Hospital on November 20, 1847.

In Canada, some physicians soon began making the best use of these miraculous new drugs. Some physiological principles were even taken into consideration right at the beginning. The earliest report on the use of sulphuric ether in Canada seems to be one which appears in the *British American Journal of Medical and Physical Sciences*, volume 3, article IV, page 10, dated Sherbrooke, March 20, 1847, and written by E. D. Worthington, M.D., under the title: "Case of Amputation of Leg—The Patient under the Influence of Sulphuric Ether Vapour."<sup>1</sup> Here are his own words:

As experiments are being daily made to test the efficacy of the inhalation of the vapour of ether, as a means of preventing pain in surgical operations, will you allow me to contribute one to the list of successful cases.

On Thursday, the 11th, I performed amputation below the knee, assisted by Drs. Andrews and Rogers, of Eaton. [In his "Reminiscences" he says, "On March 14th, 1847 . . . Doctor Rodgers of Eaton, Doctor Andrews of Cookshire."] The case was one of extensive disease of the ankle joint, involving the bones of the foot, and lower end of the shaft of the tibia and fibula, the result of an accident received seven or eight years ago. The patient, a man aged 30 ["a man named Stone"] was quite willing, indeed anxious, upon a fair representation of facts, to try any means that promised to lessen

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the dreadful pain of an operation. A large ox-bladder, with a stop-cock attached, a mouth-piece, made of thick leather, covered with black silk and well padded round the edges, with a connecting long brass tube that had done service as an umbrella handle in many a shower, formed an apparatus that, though rude looking, and bearing marks of having been got up in haste, presented withal a very business-like, and, for the country, tolerably professional appearance. A couple of ounces of ether were poured into the bladder, which was then filled with air from a bellows. Not having time or ingenuity sufficient to construct a double valve, the objection to inhaling carbonic acid gas again into the lungs was done away with, by simply allowing the patient, after a full inspiration from the bag, to expire through the nose, for three or four times, when the nostrils were kept closed, and the breathing confined to the bladder. From this time about six full inspirations sufficed to produce a complete effect; the eyes turned up under the upper lid and became fixed; his wrist was pinched, and he was asked if he felt pain; he laughed and said, "Oh no, I just feel—no pain at all!" The operation was then commenced, and terminated without his evincing, in any way, that he was at all conscious of the least feeling of pain. He retained his consciousness, talked rationally, and made some very witty remarks in answer to questions put to him, converting the scene from one of a most painful to one of an excessively ludicrous character. Both during the operation, and afterwards, he expressed himself as knowing perfectly well what was doing, and the different stages of the proceeding, but at no time did he feel pain. Indeed, after it was over, he kindly volunteered to have half a dozen legs taken off, always provided he was plentifully supplied with the gas. Alternate inhalations of gas with atmospheric air sufficed to keep up the effect, except at one time when he had a "presentiment of pain," and gave the word to "pass the bottle," which he afterwards seemed to cherish as a bosom friend. The effect terminated as the dressings were completed, leaving no visible arguments against the use of ether, and many quieting ones of its advantage. As far as this case goes, it is most convincing, and I offer it as one tending to show that, notwithstanding particular idiosyncrasies, in its general application the discovery is one that cannot fail to be of infinite advantage in the hands of the surgeon, and if to the surgeon, why not to the physician and the accoucheur?

Edward Dagge Worthington, M.D., M.A., F.R.C.S., also wrote his autobiography in 1897, "Reminiscences [*sic*] of Student Life and Practice"<sup>2</sup> in which he says, on page 81:

I think I had the honor of performing the first capital operation in Canada under the influence of sulphuric ether, and subsequently of chloroform. On March 14th, 1847, I amputated below the knee, in the case of a man named Stone, at Eaton Corner, Quebec, in the presence of Doctor Rodgers of Eaton, Doctor Andrews of Cookshire, Reverend Mr. Sherrill, and (I think) Mr. Samuel Hurd, father of Doctor E. P. Hurd, now of Newburyport, Mass. . . . On the 24th and 25th of January 1848, I used chloroform most successfully, a phial of this new anaesthetic having been presented to me by my old friend the late S. J. Lyman, of Montreal, prepared by himself, and the most perfectly pure chloroform I ever used.

I always had a slight weakness for chloroform over ether, influenced, I dare say, by a very striking case in my early experience. I had to remove a portion of the tibia, and the day before the operation I went with my friend Doctor Samuel T. Brooks, now of St. Johnsbury, Vt., to see the effect of the inhalation. I saw it, and felt it too, for after the man had taken a few inspirations, in a weak moment I gave his arm an inquiring pinch—"Do you feel that?" "Yes! Do you feel that?"—and in a second we were tumbling over the floor, near a red-hot cooking stove, and Doctor Brooks endeavoring to prevent murder! I was punched in the ribs that day enough to last for a month. The operation was made on the day following, but I had to keep in the background until the man was fairly under the influence of the ether, for if he got a glimpse of me, or heard my voice even in a whisper, he was ready to renew fight. Strange to say, I had had no

quarrel with the man, and he did not want to fight any other person. He was as untamable as a man behind the rope-netting during the exhibition of nitrous oxide gas.

Article XL of the British American Journal of Medical and Physical Sciences, volume 3, pages 288-289, datelined Quebec, February 15, 1848, is written by William Marsden, M.D., under the title "Chloroform in Quebec."<sup>3</sup> Here are the words of Marsden:

The last number of your valuable Journal contains an account of the employment of chloroform for the first time in your city, or for aught we know to the contrary at present, in the Province; and as the use of any agent that promises so much for the relief of suffering humanity, as the one in question, must form an era in the medical world, I will offer no other apology for claiming a place in your columns for the following cases:

They are both in their kind deeply interesting, independently of being the first cases<sup>o</sup> of the use of chloroform in this city, so far as I know, besides establishing most triumphantly by their results, the paramount utility of this anaesthetic agent. The first case was that of a patient in the Marine Hospital, the removal of both of whose legs had become necessary, from the effects of frost; the other, that of a youth in the private practice of Dr. James Douglas, with chronic enlargement of the tonsils.

Case I. Pierre François Lamare aet. 33, mariner, a native of Cherbourg, in Normandy, of bilious-nervous temperament, was admitted into the Marine and Emigrant Hospital, on the 21st January, with frozen feet. He had been a seaman on board the ill-fated vessel, the "Emigrant," and had had the Irish emigrant fever last autumn, at Grosse Isle, from which he recovered; and, on coming to Quebec, he had the misfortune to ship on board the "Margaret Pollock," homeward bound, and was wrecked in the River St. Lawrence, with that vessel. He was afterwards overcome by cold in the woods, in endeavouring to make his way to the sea coast on foot, through the American territory, which led to his admission to the Marine Hospital as above stated.

The amputation of both legs having been previously rendered necessary, and decided upon, it was determined to remove them both at the same time. On Friday, the 4th instant, he was brought into the operating room, and placed upon the operating table about half past ten A.M., in the presence of a large number of medical practitioners, students in medicine, clergymen, &c. Dr. James Douglas amputated the right leg and Dr. James A. Sewell the left one.

A piece of lint having been placed in a funnel-shaped piece of sheet lead, open at both ends, about a drachm and a half of chloroform was poured upon the lint, and then applied to the mouth and nose of the patient to be inhaled or inspired. There was at this time a considerable degree of nervous excitement about the patient, with small pulse, about 126. Soon after the application of the chloroform, (say about 45 seconds,) the pupils which were before contracted, began to dilate; and in about a minute and a half from the first, the ball of the eye was completely surversed, showing little, excepting the white of the eye; and the amputation was commenced by both gentlemen synchronously. The breathing of the patient became somewhat laborious and quick soon after applying the chloroform, which was probably occasioned by the outer aperture of the leaden funnel being rather small; and the body and arms became slightly convulsed, so as to render it necessary to secure the latter. The motion or struggling was not that of pain or resistance, but rather like epileptic convulsions. From the time the operation commenced, until the complete removal of both limbs, which occupied about three minutes, there was total and entire insensibility on the part of the patient; and from the time he began to feel the effects of the chloroform, until this period, the pulse gradually diminished in velocity, and increased in force, until it became full and

<sup>o</sup>On Thursday, February 3, 1848, chloroform had been twice used at the Quebec Marine and Emigrant Hospital, on Francis McNamara and on Dennis O'Hara, both for the removal of a great toe.<sup>4</sup>

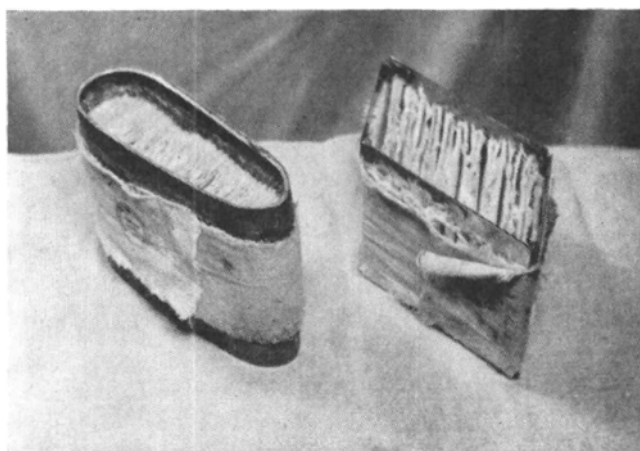


FIGURE 1. Chloroform anaesthetic apparatus used by William Marsden in 1848.

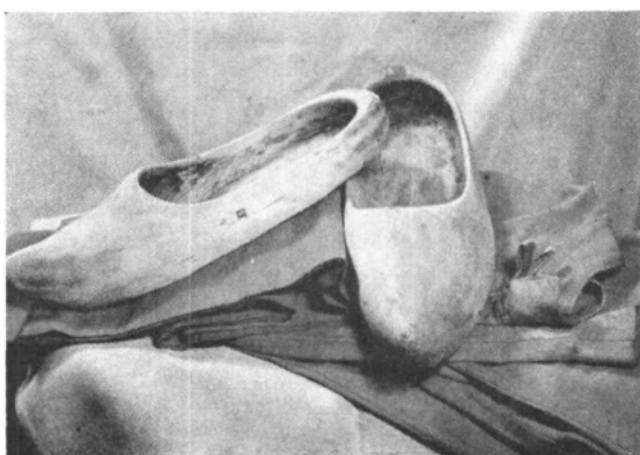


FIGURE 2. A red flannel gown and wooden shoes were used by surgeons prior to 1867.

natural, and about 96, at which it remained after his return to consciousness, which was marked by the unfolding of the ball of the eye, contraction of the pupils, and cessation of spasmodic action; and, in reply to the first question put to him, he said, (alluding to the sutures that were being inserted,) "Les aiguilles sont dures." On asking him if he felt pain, or had felt the removal of his legs, he replied, "Je n'ai rien senti du tout." His returning sensibility induced a medical gentleman who was standing by, to renew the application of the chloroform; but it was only continued for a few seconds, not being deemed necessary, so that the ligatures were applied, and the stumps dressed, whilst the patient was in full state of unconsciousness. In reply to an enquiry—What were his feelings whilst under the influence of the chloroform? he replied that "he felt no pain, and was unconscious of what was going on about him, and that he felt his head spinning round like the handle of a winch." The time occupied in the operation was very short, and the loss of blood comparatively trifling. The nervous shock was scarcely perceptible, the patient being cheerful, and even lively, and not evincing the slightest depression or weakness, as is usual after similar operations, without anaesthetic

agents. I will, Mr. Editor, for the present, merely report these cases, reserving for a future time my remarks and observations on the particular effects and advantages of chloroform.

Case II. The next case is that of John Francis Hammond, aet. 14, and son of the keeper of Bic Lighthouse, a native of Jersey. At about six years of age he caught cold, when the disease, enlargement of the tonsils, was first perceived. The enlargement was so great as almost to fill the oesophagus, the uvula lying in close proximity with them; and the hearing had become obtuse from their pressure upon, and obstruction of, the eustachian tube. Other remedial means having been resorted to without effect, the removal of the tonsils was decided on as the only certain mode of cure; but the obstinate and continued refusal of the young patient to submit to the pain, was the means of preventing its sooner being effected.

On Friday, the 4th instant, at about half past twelve P.M., having related to him the result of the case above reported, he consented to submit to the operation, providing he could be made unconscious of pain. A small quantity of chloroform, about a drachm, was accordingly used in the manner before described, and its effects were soon apparent in the pupils and eyeballs, but not quite so soon as in the former case, perhaps on account of volition. With one hand placed upon the head (which was also held by an assistant) and the other upon the under jaw, I opened the mouth and held it, whilst Dr. James Douglas secured the tonsil (the right and larger one,) with the forceps, and removed it, which was effected before consciousness or feeling returned. The muscular power was completely passive, and no resistance offered, insensibility being complete; for on the return of consciousness, which took place immediately after the extirpation of the tonsil; (and as soon as the haemorrhage would permit him to articulate,) he asked, "What has been done?" and on being told that one of the tumours had been removed, he shook his head, saying, "Oh, no!" and on being re-assured that such was indeed the case, he said, with the most unfeigned incredulity, "Eh bien! montrez moi le donc," and on its being shown him, his astonishment knew no bounds, and he at once exclaimed, "Otez moi l'autre tout de suite." The chloroform, however, being expended, his wish could not be gratified at this time. His last exclamation showed, incontestably, that complete insensibility must have been produced, since the lapse of a few minutes only had converted an unwillingness into desire; and on being told by his father a few days previously, in my presence, that if he did not submit to the operation, he would die, he declared that he would rather die than submit.

Dr. Douglas at once determined, with his characteristic perseverance, to try to manufacture some chloroform, well knowing, that at any future time, he might need the article, when it could not be procured for a day or two, even with the aid of the Magnetic Telegraph; and the reward of his perseverance, after several trials, has been the obtaining the desired article.

On Friday, the 11th instant, at about half-past nine A.M., the boy was again placed under the influence of the chloroform, which had been manufactured by Dr. Douglas, and the other tonsil was removed, with the same results as before. The only difference in the effects were, that he was longer in coming under its anaesthetic influence, and longer in recovering from it, also. The probable reason why he was longer in coming under the influence, on this occasion, of the chloroform, than on the former one, was the repeated and imperfect trials of the agent between the 4th and 11th instant, by which he had become somewhat familiarized with its effects, added to his extreme unwillingness to yield to its influence, and his natural resistance; but experience alone can establish the correctness of this supposition. It was not until several minutes, (probably ten,) that he was aware that the operation had been completed; and his delight and astonishment were unfeigned, in his exclamation, "Quoi est il possible que c'est oté?"

The result, then, Mr. Editor, of both these cases, fully establishes the utility of this invaluable discovery. In the one case, both legs were amputated at the same time, without the slightest feeling of pain or consciousness; and in the other, both tonsils

were extirpated from a most unwilling patient, under similar highly favourable circumstances.

Who were those fearless and daring physicians? An excerpt from the *Medical Age*, Detroit, Michigan, dated March 25, 1895, tells us about Doctor Worthington, who died at Sherbrooke on Monday, February 25, 1895.



FIGURE 3. Edward Dagge Worthington.

Doctor Worthington was born in Ballinakill, Queen's County, Ireland, December 1st, 1820. Two years later he came with his parents to Canada. In 1834 he was indentured for seven years as a medical student with that distinguished practitioner, the late James Douglas, of Quebec, but was released from his apprenticeship at the end of five years to enable him to accept an appointment as Assistant Surgeon to H.M. 56th Foot, then quartered in "Lower Canada," and subsequently (1845) was promoted to Staff Assistant Surgeon, serving with H.M. 68th Light Infantry. Later he resigned his commission to proceed to Edinburgh, where he attended lectures at the University, winning the silver medal in his year for medical jurisprudence. He was in "auld Reekie" during the Snowball Riots, a graphic account of which appeared from his pen in *The Medical Age* last year. He passed a most brilliant examination for the degree of Doctor of Medicine, which was bestowed upon him by the College of St. Andrews. Later he became a licentiate of the Royal College of Surgeons, and of the Faculty of Physicians and Surgeons of Glasgow. Upon his return to Canada he received the license of the Montreal Medical Board, and almost immediately located in Sherbrooke and entered upon active practice. In 1855 the University of Bishops College conferred upon him honoris causa the degree of M.A., and in 1868 the University of McGill College granted him the degree ad eundem of C.M., M.D. For some years he was likewise one of the

governors of the College of Physicians and Surgeons of Lower Canada. He was the first president of the St. Francis District Medical Association, and to his zeal, to a great extent, was due the organization of the Canadian Medical Association.

Doctor Worthington was the first surgeon in Canada to perform a capital operation under an anaesthetic—the first to use both ether and chloroform.

As his physical condition became worse, even the delights of authorship were denied—“one more pleasure taken away,” he wrote the editor of the *Age*, “and I now look forward almost with eagerness to the moment when I shall lay down the burden of life.” His death was not unexpected—it was understood by himself and family that the end might come at any moment. He was, as he often remarked, “weary, weary, beyond expression.” Happily he was spared great suffering, and no little child in its mother’s arms ever went to sleep with greater peace and restfulness than that which marked the passing of this grand and noble character “beyond the dark river.”

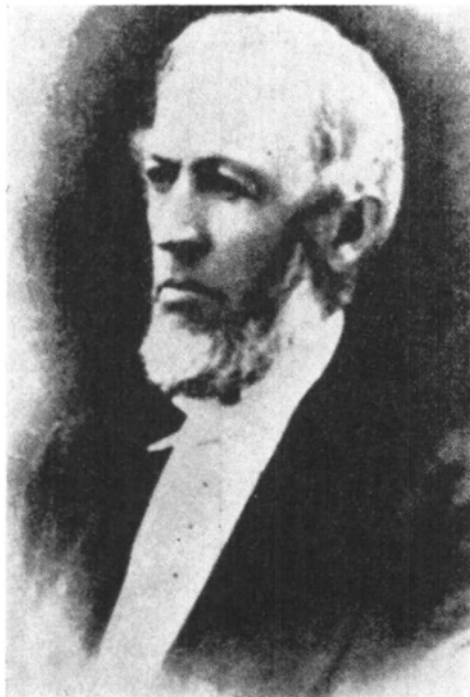


FIGURE 4. William Marsden.

William Marsden (1807–1887) was born in Lancashire in 1807, and came with his parents to Quebec in 1812. He took his primary education at the Royal Grammar School in Quebec, studied and qualified in medicine in Edinburgh, London, and Paris. Back in Quebec in 1830, he took an active part in all good works and in medical organization: lecturer in anatomy, physiology, surgery, materia medica, and botany. For 40 years, he was an examiner in the College of Physicians and Surgeons of the Province of Quebec of which he was also once the President. He was granted memberships and awarded fellowships of the Medical Botanical Society of London, the Lyceum of Natural History and the Medical Society of London. In 1852, he published his “Essay on the Contagion, Infection,

Portability, and Communicability of the Asiatic Cholera, in Its Relations to Quarantine, with a History of Its Origin and Course in Canada, from 1832." He was a prolific writer, a contributor to the *Quebec Daily Mercury*, the *Lancet*, the *Canada Medical Record*, and the *British American Journal of Medical and Physical Sciences*. In the words of Dr. Arthur D. Kelly, he is "our forgotten man," the man behind the scene in the foundation of the Canadian Medical Association. He seized the opportunity of attending the annual meeting of the American Medical Association in Cincinnati in May 1867 to see the American organization which was then 20 years old. He convened a meeting of the Quebec Medical Society within a few days of his return and prepared an invitation to a meeting in Quebec on Wednesday, October 9 and on Thursday, October 10, 1867, which was despatched to all the 3,000 known physicians in Canada. One hundred and sixty-four delegates attended, and the Canadian Medical Association was thus founded.

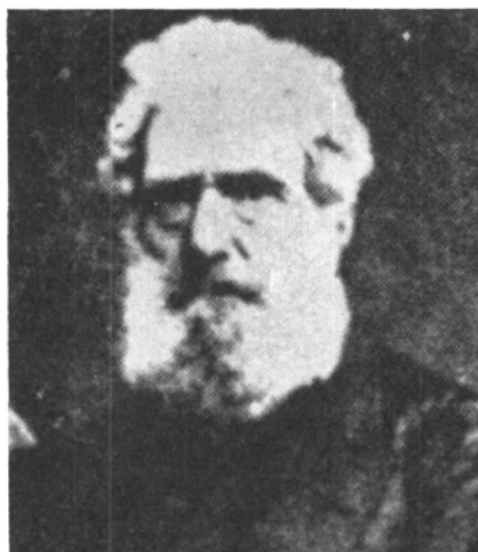


FIGURE 5. James Douglas.

James Douglas (1800–1886) was born in Scotland and came to Quebec in 1826.<sup>5,6</sup> He was an adventurer, an explorer, and a sailor. He was a lecturer in anatomy at Auburn Medical School. After perilous adventures due to his unorthodox manners of acquiring dead bodies for his dissecting room, he left Utica, U.S.A., in some haste with his wife and all his belongings including his horse and a buggy, and arrived in Quebec City on March 13, 1826. He taught anatomy in the cellar of his home on Mountain Hill, and at the Marine Hospital. He spent the winter of 1850 in Egypt and Southern Italy. In 1865, he retired a wealthy man but became a pauper by speculating on mines and real estate. He went to live in Phoenixville, Pennsylvania, with his son James who had made a fortune in metallurgy by devising a new technique for extracting copper. Dr. James Douglas died in 1886 of a stroke.





FIGURE 6. James Arthur Sewell.

James Arthur Sewell (1810–1883) was the son of Jonathan Sewell, one of the most illustrious politicians of his time. He studied medicine at the Hôtel-Dieu de Québec and at the University of Edinburgh. He was the Dean of the Faculty of Medicine of Laval University for twenty years (1863–1883). He practised medicine and surgery at the Hôtel-Dieu de Québec for 47 years (1837–1883), and at the Quebec Marine Hospital. As president of the Quebec Medical Society in 1867, he was host to the 164 delegates who met in the Grand Hall of Laval University in Quebec (Fig. 7) and founded the Canadian Medical Association. At the opening of the first meeting of the C.M.A. he was called to the chair; here are some excerpts of his address:

I should be proud on any occasion to act as the representative of my colleagues; I am particularly so on the present, surrounded by so many eminent medical practitioners from all parts of this new and great Dominion of Canada; met together for the first time in convention, to discuss topics connected with the advancement of the medical profession, the development of science; and the elevation of standards as well of general as of professional, education. Among the various associations which are the least tinctured with selfishness, and therefore tend most to elevate our nature and benefit mankind are those having such objects in view as I have just detailed. Whatever tends to raise and dignify our profession, tends also to the comfort and well being of Society. Whatever tends to make individual members of that profession better men and better physicians, contributes most materially to the advantage of the public at large. We are not seeking our own aggrandisement nor our own individual advantages; we desire to promote the general welfare of our fellow-men and shall rest content to benefit with the mass. . . . Gentlemen, I look upon this day as a most important one in the History of Canada, one

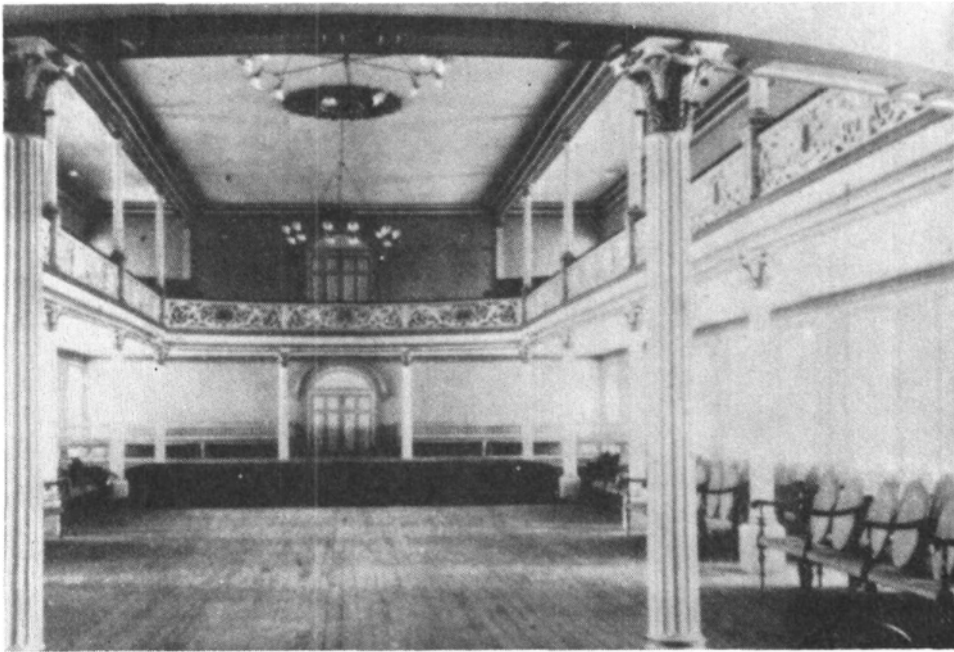


FIGURE 7. The Grand Hall of Laval University, where the Canadian Medical Association held its first meeting.

replete with interest and full of bright promises for the future, not only to us, but to society at large.<sup>7</sup>

There is nothing new under the sun. As John Homans said in 1936: "In every art, fundamental matters are perennially being discovered, discredited, forgotten, rediscovered and reconfirmed."

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