Tarnished Adornment: The Troubled History of Québec’s Institut du Radium

CHARLES HAYTER

Abstract. In 1922 the Québec government appropriated $100,000 for the purchase of radium to found an Institut du Radium at the University of Montreal. Opened largely through the initiative and drive of Dr. Joseph-Ernest Gendreau, the Institut was the first organization devoted to radium therapy and cancer treatment in Canada. This paper describes the background, origins and development of the Institut with a focus on the medical, political, and cultural factors which led to its establishment. From the point of view of the Québec government, the Institut was a way of showing its commitment to health care, of strengthening cultural bonds with France, and of demonstrating the province’s emerging technological prowess. Radium was to be an adornment which showed off the scientific advancement of 20th century Québec. Unfortunately, the Institut never achieved the scientific or cultural stature promised by the rhetoric which surrounded its opening, and this paper will examine the factors which led to its instability and eventual demise. In addition to an overwhelming clinical workload, chronic underfunding and geographic isolation, the Institut fell victim to medical politics. Its success was undermined by opposition from medical groups and competition from hospitals which led to the establishment of multiple radium centres in Montreal. A fundamental problem was confusion over whether its role should be a research institute, a general medical clinic, or a specialized cancer centre. Despite numerous financial and administrative crises and the severing of its academic affiliation in 1945, the Institut survived until 1967. Despite its troubled history, the Institut made an important contribution to Canadian medicine through its ground breaking role in the establishment of radiotherapy and cancer treatment. In addition, the lessons learned from its difficulties proved useful to other provinces planning their own cancer programs.

Résumé. En 1922, le gouvernement du Québec attribuait 100 000$ pour l’achat de radium en vue de la fondation d’un Institut du Radium à l’Université de Montréal. Foncé en grande partie grâce à l’initiative et au dynamisme du Dr Joseph-Ernest Gendreau, l’Institut était la première organisation consacrée à

Charles Hayter, M.D., Department of Radiation Oncology, University of Toronto.

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la radiothérapie et au traitement du cancer au Canada. Cet article décrit le contexte, les origines et le développement de l'institut en mettant l'accent sur les facteurs médicaux, politiques et culturels qui ont conduit à la naissance de cet établissement. Du point de vue du gouvernement du Québec, l'Institut était un outil permettant de prouver son engagement dans les soins de santé, d'afﬁrmer les liens culturels avec la France et de démontrer les prouesses technologiques qui émergeaient dans la province. Le radium était un symbole qui illustrait l'avancement scientiﬁque du Québec du 20e siècle. Malheureusement, l'Institut n'a jamais atteint la stature scientiﬁque ou culturelle promise par la rhétorique entourant son ouverture et cet article examinera les facteurs qui ont conduit à son instabilité et à sa disparition éventuelle. En plus d'un travail clinique accablant, d'un sous ﬁnancement chronique et d'un isolement géographique, l'Institut a été victime des politiques médicales. Ses succès étaient minés par l'opposition des groupes médicaux et par la compétition des hôpitaux, ce qui a conduit à l'établissement de plusieurs centres du radium à Montréal. Un problème fondamental était la confu- sion concernant son rôle : institut de recherche, clinique médicale générale ou centre spécialisé sur le cancer ? En dépit de nombreuses crises ﬁnancières et administratives et de la perte de son afﬁliation académique en 1945, l'Institut a survécu jusqu'en 1967. Malgré son histoire mouvememtée, l'Institut a cependant apporté une contribution importante à la médecine canadienne par son rôle innovateur dans l'établissement de la radiothérapie et du traitement du cancer. De plus, les leçons apprises de ses difﬁcultés seront utiles pour les autres provinces quand elles élaborent leur propre programme contre le cancer.

INTRODUCTION

On 3 April 1923, the Premier of Québec, Louis-Alexandre Taschereau, gave a speech at a ceremony at the University of Montreal to mark the inauguration of the Institut du Radium. The presence of the premier at this event reﬂected the ﬁnancial and political interest of the provincial government, which had provided $100,000 for the purchase of radium as a foundation for the Institut. Taschereau spoke of the importance of radium to Québec society. In addition to its medical importance in combattant “the ever-increasing ravages of cancer,” radium would be a pow- erful symbol of Québec’s material and technological progress. “For three hundred years,” he said, “we have laboured to construct our house; is it not time to furnish and adorn it? It’s true. For several years yet we can, from among the articles and objects of adornment, choose those that are not only beautiful, but that can be useful to us in some fashion.” As a new and glamorous medical treatment with seemingly miraculous healing powers, radium seemed the ideal ornament for Taschereau’s interior design for Québec.

The opening of the Institut was a signiﬁcant event in Québec and Canadian medical and political history, for it marked the ﬁrst investment by the state in radium therapy in Canada, and the ﬁrst attempt to
establish an organization dedicated to the study and use of radium on Canadian soil. Despite the noble goals and optimism expressed at the opening, the Institut never achieved its promised significance or prominence. Indeed, within a few years its existence was repeatedly threatened by a series of financial and administrative crises which permanently weakened its position in Québec medical culture and ultimately led to its demise in 1967. This article will describe the background, origins, establishment and development of the Institut du Radium, and examine the factors which undermined its success. My central thesis will be that the Institut's weakness grew out of a chronic lack of clarity about its role and identity.

J.-E GENDREAU AND HIS RADIUM DREAM

Radium is a radioactive metallic element discovered by Marie and Pierre Curie in 1898. It quickly attracted medical attention because of the healing effect of its gamma radiation on diseased tissues. When inserted into tumours or body cavities, tiny amounts of radium could produce apparently miraculous healing of cancers and other lesions. Initially, medical experimentation with radium was hampered by the meager world supply and lack of facilities to study its medicinal properties. It took 4.5 tons of Bohemian pitchblende to produce one gram of radium. In 1904 the French industrialist Armet de Lisle established a radium refinery in Paris, and supplied radium to establish the first centre for the study of radium therapy, the Laboratoire Biologique du Radium, which opened in 1906. The Laboratoire included physics, pathology, and physiology laboratories, and studies of the therapeutic action of radium on diseases were carried out under the direction of Dr. Louis Wickham. In 1912, the Laboratoire Biologique was superseded by the Institut du Radium of the University of Paris, composed of two laboratories, one where Marie Curie continued her investigations into the physics and chemistry of radioisotopes and the other for the study of their application in disease. Similar centres for the study of radium were established elsewhere in Europe: in Sweden, the Radiumhemmet (Radium Home) was established in 1910, and the following year King Edward VII convinced two wealthy friends to sponsor a Radium Institute in London after his own successful treatment for a lesion on his nose.2

In Canada, prior to WWI a few doctors and hospitals acquired small amounts of radium. The most active promoter of radiotherapy in these early years was Toronto's Dr. William Aikins, who opened a private radium clinic around 1910 where he treated patients from across the country.3 After the war, the centre of activity shifted to Québec, where the driving force behind the purchase of radium and the formation of the Institut was Joseph-Ernest Gendreau (1879-1947) who in the early
1920s was Director of Studies in the Faculty of Medicine of the University of Montreal. Gendreau was born in Coaticook in the Eastern Townships of Québec. His bilingualism became an asset when he later attended and addressed international meetings on cancer treatment. After graduating from St. Hyacinthe Seminary, he was a member of the Jesuits until the outbreak of World War I, when he traveled to France to further his education. Gendreau’s time in Paris had a large influence on his subsequent interests and career. He studied mathematics, astronomy, and geology with leading French scientists, and his interest in radiology was awakened through direct contact with Marie Curie, Henri Becquerel, and pioneer French radiologist Antoine Béclère.4 Gendreau received both an MD and PhD from the University of Paris, and this dual training in science and medicine held promise for translation of basic science knowledge to medical practice.

After his return to Canada in 1919, Gendreau was appointed to the Faculties of Medicine and Science at the University of Montreal. Later in his career he served as Head of Physics in the Faculty of Science and Professor of Medical Physics in the medical faculty.5 Experience in the Institute of Radium in Paris had undoubtedly awakened the dream of a similar institute on Québec soil in the young French-Canadian’s doctor’s mind, and Gendreau lost no time in planning a radium centre for Montreal. In 1919 he presented an idea for a radium laboratory to be funded by the municipal or provincial governments to the Medical Society of Montreal.6 The following year, he submitted a detailed plan for organization of a Québec Radium Institute to the Provincial Secretary, Athanase David.7 The project was stimulated by the visit to Montreal of Dr. Peyron, chief of the cancer laboratory of the École des Hautes Etudes Paris, who had offered his expertise and help. In his letter to David, Gendreau drew attention to the formation of radium institutes in countries such as Britain, Germany, and the United States and pointed out that Québec now had a “wonderful opportunity to create a work of uncontested value and worldwide impact.” In addition, a radium institute would help to focus attention on cancer, a disease that was beginning to attract the attention of public health officials through its increasing mortality.8 His grandiose plan included several elements: a biological service for the experimental study of radioactive substances and their application in disease; a physics service for the extraction, preparation, and measurement of radium emanation (radon); a geological service to look for radium deposits in Québec; an office of agronomy for the development of radioactive muds to stimulate agricultural production; and an office of control for regulation of the use of radium. Such a project would not come cheaply: Gendreau projected a total cost of $400-500,000, chiefly for the purchase of 2 grams of radium. This request was favourably received, but the cost was considered beyond the government’s means at the time.9
Displaying the tenacity that was a hallmark of his personality and of other Canadian radium pioneers, in early 1922 Gendreau wrote directly to the premier and cabinet of Québec. On this occasion he framed his appeal for radium within a wider context: the improvement of Québec society through scientific research. Gendreau argued that the progress of society, including the extension of the human life span, had all been based on the scientific advancements of recent decades. He quoted Balfour: “science is the great instrument of social change, and its silent appropriation of knowledge amid the din of political and religious strife is the most vital of all the revolutions.” Moreover, science was the key to future economic prosperity. Gendreau quoted American industrialist George Eastman: “Only by research and the systematic development of knowledge can we hope to attain to the true increase of wealth, an increase which affects the comfort and happiness of employer and employee alike.” However, as Gendreau pointed out, Québec was sadly lacking in scientific inquiry and research. The French-Canadian universities had barely enough funding for teaching, let alone for research. According to Gendreau, radium was the ideal choice to rectify this situation. Its many advantages included its permanence, which meant that the initial investment would never be lost, and the huge economic windfall that would result from the possible discovery of radium on Québec soil. In addition, radon gas emitted from radium could be distributed to the hospitals of Montreal and Québec for the treatment of the ill. The establishment of an Institute of Radium would thus give Québec an important foothold in the world of modern science. On this occasion, Gendreau lowered the price tag to a more palatable $150,000. Gendreau’s invocation of social improvement through science reflected a familiar theme of the 1920s that was symbolized in the federal government’s establishment of the National Research Laboratories in 1928.

Taschereau’s response to Gendreau was ‘amiable” but he requested clarification of certain points, particularly about the medical uses of radium. Gendreau replied in characteristic style, inflating his letter of February 1922 with a collection of effervescent testimonials from doctors around the world about the powers of radium. Dr. Howard Kelly of Johns Hopkins, Baltimore, said, “In certain types of cancerous growth, Radium has accomplished marvelous cures in cases where surgery would have been impossible.” Gendreau quoted a newspaper interview with Aikins in which the Toronto doctor had been asked whether he had any evidence of the value of radium in his own practice. “I have several hundred living reasons on which my faith founded and they are walking about on two legs,” said Aikins. Gendreau followed this letter with a petition signed by the Deans and leading physicians of the University of Montreal.
By the summer of 1922, the Taschereau administration began to look favourably on the purchase of radium. An important factor was that the ideas put forward by Gendreau fit well with several elements of the Liberal government’s agenda for the province. Taschereau had ascended to the premiership in the summer of 1920 with a program of vigorous economic progress for Québec. There can be little doubt that Gendreau’s vision of a society propelled by science fed into the government’s preoccupation with such schemes as northern hydroelectric development and industrialization of Québec’s natural resources. The development of aluminum smelting and chemical production industries in Shawinigan between 1900 and 1925 was a striking example of the power of science to stimulate economic growth. But as Bernard Vigod has shown, the Taschereau administration was also noted for its social legislation. Prior to the 1920s, the Québec government had little involvement in welfare and public health, which were the domain of charitable organizations and the church. The first important piece of legislation was the Public Charities Act of 1921 which provided for state support of the costs of hospitalizing the poor. Education and health were two other areas of focus. The Québec Public Health Act of 1922 created a powerful new Provincial Bureau of Health to oversee programs in such areas as child welfare, sanitation, venereal disease, and tuberculosis. As one newspaper account noted, radium would be an additional link in the programme for better health in the province which Taschereau had announced at his inaugural banquet in 1920. Specifically, the purchase of radium would indicate a governmental response to cancer, a disease which was attracting attention because of its increasing mortality and associations with pain and suffering. In the early 1920s, public health officials were starting to believe that cancer could be defeated through the same type of public health programs which had proven successful against TB. Finally, radium would strengthen cultural and scientific ties to France, an issue of particular appeal to Taschereau’s provincial secretary, Athanase David, a promoter of French-Canadian culture.

Radium thus seemed a perfect fit with the government’s economic and social agenda, and in the summer of 1922 the government authorized the expenditure of $100,000 for the purchase of radium. The manufacture and sale of radium had become big business, and after studying tenders from four companies, the government decided on 24 August to award the contract to the United States Radium Company of New York, which agreed to provide one gram of radium “under perfect conditions,” and to install free of charge an apparatus for the production of radon. The company agreed to provide the services of Mr. Gioacchino Failla, physicist at the Memorial Hospital, to supervise the installation
and start-up of a radon plant. The plant would permit the use of “radium emanations” which, as the Montreal Gazette observed, “have semi-miraculous effects in certain cases of disease.”

RADIUM “EMANATIONS”

The use of “emanations” (or radon gas) rather than metallic radium was a common feature of early radiotherapy programs in Canada. Radon treatment was incorporated into the cancer programs in Saskatchewan, Manitoba, and Ontario from the outset, and thousands of Canadians received radon treatment from the 1920s until other radioisotopes came into use after WWII. Because of the widespread use of radon in the first few decades of cancer treatment in Canada, it is worthwhile at this point to review briefly its scientific basis and the origins of its use in therapy. In undergoing radioactive decay, radium emits a gaseous byproduct, radon, which itself emits gamma radiation as powerful as that produced by radium. If radium salts are dissolved, the solution produces a continuous output of radon gas which can be siphoned off. The gas in turn produces gamma radiation that can be used for treatment. By 1915 physicists had developed apparatuses for extracting and purifying radon gas from dissolved radium. Since another term for radon gas was “radium emanation,” these apparatuses were often known as “emanation plants.” In North America, emanation plants designed by Harvard physicist William Duane were installed at the Johns Hopkins Hospital and at Memorial Hospital (New York) before 1920.

Radon offered many theoretical advantages over radium. Because they were smaller than radium needles or tubes, radon seeds could be inserted more easily into body cavities or tumors. The use of radon was potentially safer than radium, because its half-life (3.83 days) is much shorter than the parent metal (over 1600 years). This means that in a few days all the radioactivity from radon will have virtually disappeared, leaving containers of the gas inert and safe. More importantly, the use of radon rather than radium protected the costly radium against loss or theft. In the early years of radium treatment, there were many unhappy experiences with accidental loss of valuable (and dangerous) containers of radium. The use of radon allowed the radium supply to remain in a central secure location while the radon could be distributed widely for treatment. These advantages were summarized by Memorial Hospital physicist Edith Quimby: “the precious radium could be kept in a safe, with no danger of loss, theft, or breakage, while adequate activity could always be available in the form of radon.” In addition, radon possessed greater flexibility as a form of treatment since the gas could be subdivided and concentrated into smaller quantities than radium salts.
Once radon was produced, how could it be applied to patients? During the early years of radium enthusiasm, there was a vogue for inhalation of radon gas which was thought to have stimulative and restorative powers. The gas was administered either by small portable devices or in large rooms called “emanatoriums.” However, this form of radon delivery was of dubious benefit and could not produce the high localized radiation doses required to cause destruction of a tumour. Working in collaboration with Duane, Memorial Hospital surgeon Henry Janeway developed a method of collecting the radon in tiny lengths of glass capillary tubing which could be inserted directly into diseased tissue. This technique theoretically produced a high dose of radiation to the cancer while sparing the healthy tissues outside. Janeway investigated the use of these “seeds” in the treatment of a wide variety of human cancers and found particular success in eradicating cancers of such accessible sites as the mouth, lip, and tongue. The seeds could also be laid directly on the surface of a tumour and were used in this way to treat bladder cancers. In 1917 Janeway and his colleagues publicized the results of this technique in his book Radium Therapy in Cancer. As his fellow Memorial surgeon James Ewing recollected, “The sensational character of this advance can hardly be realized by one who had not lived through the trying period when superficial healing of...carcinomas was regularly followed by recurrence and death.” In subsequent years this technique was developed and improved, particularly by the replacement of glass by gold containers (the gold offered better filtration of superficial rays). Thus by 1922 the use of radon seeds was considered a standard method of administering radiotherapy.

THE ESTABLISHMENT OF THE INSTITUT DU RADIUM

The next issue to be established was the location of the Radium Institute. The logical choice was Gendreau’s home institution, the University of Montreal, which responded enthusiastically to this suggestion. The importance of the Institut to the university’s own scientific development and overall reputation was emphasized at a meeting of the Committee of Studies in September 1922. The selection of the University of Montreal over McGill may seem odd in view of the strength of the physics department at the latter institution, where Rutherford had undertaken pioneering studies of radioactivity, but the choice may have been a deliberate attempt to enhance the French institution’s prestige. An agreement between the provincial government and the University dated 11 November 1922 established the terms under which the radium was to be entrusted to the institution. The university was to take the utmost care for the security and distribution of radium, and “the radium entrusted by the government to the university will be used for scientific research; the
surplus emanation will be distributed to hospitals and institutions with suitable qualifications and competence, at a price to be determined, and free when it is to be used for treatment of indigents." The use of the term "surplus" to describe the use of radium for medical purposes suggests that the clinical use of radium was to have a lower priority than basic physics research, and is at variance with contemporary media reports, which stressed the medical significance of the Institut. For example, one newspaper article stated that the Institut would be "in the first place an invaluable help to hospitals" for their cancer patients, and next a place of scientific research. Thus there was confusion about the Institut's role right from the start. The Institut was to be governed by an administrative council of representatives from the administration and faculty of the university, and its director was to be Gendreau.

The arrival of radium in Québec in October 1922 had a somewhat melodramatic flavour. In the company of two detectives, Gendreau traveled to the border crossing at Rouse's Point, N. Y. where he received the radium from two American officers. The precious shipment was placed first in a vault at the university, and then in a bank while space at the university could be arranged. Although the Institut was supposed to open in the fall of 1922, a fire at the University of Montreal delayed final arrangements. The delay allowed Failla to travel to Montreal to erect the radon plant in a room in the basement of the university. At last, the work was completed and in the late afternoon of 20 January 1923, the radium salts were dissolved and sealed in the apparatus. A description in the Montreal Gazette conveys the magical appearance of this machine:

With the lights turned out and the room darkened, the gas from the radium was seen filling the maze of the glass tubes and bulbs, of which the machine is composed. This radium gas shines with a mysterious blue light, and its progress through the machine was observed as it was forced and compressed by the powerful electric pumps and the mercury seals.

On 3 April 1923, an august group of personages including Premier Taschereau, Provincial Secretary Athanase David, the French consul and the rector of the university attended the inauguration of the Institut. Confessing that he had no experience of politics, Gendreau spoke of the aim of politics as the promotion of the material, intellectual, and moral well being of people, and the Institut's important role in these goals. In contrast to Gendreau's sententiousness, Taschereau gave a genial, short speech laden with little radium jokes. He called the rector of the university "a radium of kindness," and, alluding to a portrait of himself illuminated by radium, said, "radium makes luminous a subject that is itself not luminous at all."

The presence of the French consul encouraged Taschereau to mention a further goal behind the government's sponsorship of the Institut: the
strengthening of scientific and cultural ties between Québec and France. Radium was a product of France; its natural home outside France was therefore Québec. The opening of the Institut would encourage ties between France and Québec, including an increase in the number of Québec students sent to study in Paris. The link between Paris and Montreal was formalized when in the spring of 1923 the Institut du Radium was officially affiliated with the Fondation Curie. The promotion of the Institut's French-Canadian roots was at odds with the government's pronouncements that it was to serve all the people of Québec and lay behind later dissatisfaction of the English-speaking hospitals of Montreal.

Despite its intended research focus, the Institut's activities quickly became dominated by clinical work. A report on its activities from its opening to the end of December 1927 reveals that over that period 19,790 treatments were given to 1,515 patients. The diagnoses give an illuminating picture of medical uses of radon in the 1920s. Although the majority of treatments were given to persons with cancer, a significant proportion (23.5%) were given for benign conditions which ranged from manifestations of tuberculosis to haemorrhoids, angina, Parkinson's disease, and vague entities such as "chronic inflammations." As will be emphasized below, the Institut's treatment of non-cancerous medical conditions was a sign of a lack of definition of its role and led to distrust from private practitioners who felt it was usurping their territory. The commonest cancers treated in this early period were skin, oral cavity, uterine, and breast tumours; of these, Gendreau reported the highest cure rate (78%) for skin cancers. For the other malignancies, "improvement" was seen about half the time, but actual cures were less frequent. The Institut's mandate included distribution of radon to other hospitals, and the report mentions 138 treatments at the Montreal General Hospital, and 52 at the Royal Victoria Hospital, using radon from the Institut.

The Institut became a focus of civic and provincial pride. "The Province of Québec may boast of the only radium emanation apparatus, the largest amount of radium itself, and the most enthusiastic body of radiologists in the entire Dominion," reported the Montreal Star in June 1923; continuing the hyperbole, the Gazette described, "the huge radium emanation apparatus, superior to any ever installed." In remarks to a meeting of the Québec nurses' association, Gendreau pointed out that the Institut was one of only five radiotherapy institutes in North America. In its early years of operation, it was frequently visited by physicians interested in its apparatus and techniques. In the spring of 1923, for example, many North American doctors in Montreal for the annual meeting of the Canadian Medical Association visited the Institut, and the Gazette proudly noted that the physicians were greatly impressed with the initiative of the Québec government. Such visits were often followed by written testimonials which Gendreau quoted in letters solicit-
ing support for the Institut. Dr. G. E. Pfahler, professor of radiology at the University of Philadelphia, wrote saying he was "deeply impressed" by Gendreau's work because his results were "excellent and better than are usually obtained." Such kudos greatly enhanced Gendreau's reputation, and he quickly became regarded as one of Canada's foremost experts on cancer and its treatment. In 1928 he was one of five delegates from Canada at the International Conference on Cancer in London, and in 1935 he gave the keynote address at the launch of the King George V Silver Jubilee Fund for Cancer in Ottawa.

1925: THE FIRST CRISIS

Ironically, the Institut's success in attracting patients led to its first major crisis. Just over two years after the opening, the administrative council decided to suspend all treatment. The Institut had become a victim of its own successful publicity and the public perception of radium as a miracle cure, and it had been inundated with poor patients who saw it as the last hope for cure or relief. Although the Institut received a small operating grant from the university, the major source of revenue to support its operating expenses and salaries of its staff came from fees charged to patients. Without these fees, its existence was threatened. By the fall of 1924 the Institut was already in a financially precarious position, and Gendreau requested official recognition by the Department of Public Assistance so it could receive government reimbursement for the treatment of indigents. In January 1924 the medical staff was asked to give 10% of their salaries to defray operating costs.

A further problem was the unsatisfactory physical conditions in which patients were being seen. The basement of an educational institution was hardly the place for adequate care of the sick. A glimpse of the conditions is provided by Gendreau's assistant Dr. Origene Dufresne, who described his discomfort at seeing "the unfortunate cancer patients sliding by the mobs of students towards the abandoned former menagerie, there to await their turn to enter the small, dimly lit room, exposed to radium radiation and the unpleasantness of their surroundings." Gendreau described the pathetic situation of a poor cancer patient crying in pain in his doorway, surrounded by students. There was also mounting concern about radiation exposure to the users of the university.

At its meeting in May 1925, the administrative council of the Institut decided to suspend all treatment and to place the Institut under the direction of a hospital which could provide the administrative and medical support necessary for the proper care of the sick. Even before the opening of the Institut, Gendreau had suggested to Taschereau that the Institut could form the basis of a specialized cancer hospital similar to those already established in Paris and New York. In June 1925 the cabinet agreed with
this concept and granted $10,000 for this purpose. The city of Montreal agreed to allow the Institut to move into the abandoned Maisonneuve City Hall. Maisonneuve, on the eastern end of Montreal, was a former independent municipality which had been absorbed into Montreal in 1910. Its grandiose but unused city hall was transformed into a small hospital where both outpatient clinics and inpatient beds could be accommodated. The governance of the Institut was shifted to an independent corporation for whom letters patent were issued and the day-to-day administration and supervision of care was transferred to the Grey Nuns order. Hope was brought to the Institut's financial plight by the agreement of the Department of Public Assistance to support the care of the sick poor.

Completed by the end of 1927, these changes reflected a fundamental redefining of the Institut's purpose and goals. The original vision for the Institut was of a research institute which would generate knowledge that would help to improve Québec society, but now it was being regarded more clearly as a place for care of the sick. The loosening of the geographic and administrative ties to the university emphasized this new focus. While the transformation of the Institut into a small cancer hospital helped to stabilize its future, this step irrevocably weakened its role in the generation of new knowledge. Indeed, in his 1933 report to the Curie Foundation, Gendreau admitted that research had been limited. Indeed, it was difficult to carry on research amid the ceaseless tide of sick people needing treatment. In 1931 the number of new patients treated was 2,219 and this workload required an increasing number of staff and equipment. By 1933 the Institut had a staff of 6 doctors and 50 technicians and nurses, and had acquired a deep-x-ray apparatus to augment its radiotherapy armamentarium. Gendreau continued to promote the activities of the Institut. In a 1933 report to the Curie Foundation, he offered testimonials to the success of his institute from such luminaries as Burton Lee, director of the Memorial Hospital in New York, who was impressed by the "dignified and efficient manner" of the Institut's work and felt that it deserved the "heartiest support" of the medical profession. Gendreau hoped that the Institut would be able to continue to reflect into America a distant ray from the Foundation Curie "just as New France had reflected something of the life and glory of the Mother Land into the valley of the Saint Lawrence." This streak of nationalism ran through all of Gendreau's reports.

A CANCER HOSPITAL OR A GENERAL HOSPITAL?

The rhetoric hid persistent financial and administrative problems. Despite irregular handouts from the city and province, the Institut still had difficulty in making ends meet. In January 1931 the board of the Institut received a financial report which projected a deficit of $63,000 for the
Although the university donated $30,000, by the fall the financial situation was so desperate that the administrative superintendent, Dr. T. Parizeau, wrote directly to Taschereau to ask for help. Parizeau pointed out that of the 2144 patients treated between July 1929 and July 1930, 1500 (70%) were treated for free. The persistent influx of poor patients was related to two factors: the onset of the Depression and the Institut’s location in a working-class district of Montreal. The Institut was unable to cope with its patient volume, and about 50% of planned treatments were being set aside because of insufficient staff and equipment. Parizeau predicted that patient numbers would only increase, and the Institut would have to close if the government did not come to its aid.

The Institut was supposed to be paid by social service agencies of the city and the province for the treatment of poor patients. One of the major problems that emerged was the reluctance of city social assistance administrators to pay the Institut for residents of Montreal who could not afford to pay. In the fall of 1933, Dr. Alphonse Lessard, Director of Public Assistance for Quebec dispatched an official of his department to Montreal to investigate the situation. The municipal director of public assistance, Albert Chevalier, indicated that the chief reason for refusing the requests was that the Institut, supposedly a cancer facility, was functioning as a public clinic where patients were receiving treatment for all sorts of non-cancerous conditions such as tonsillitis and tuberculosis. He alleged that patients were even receiving radiotherapy as a form of weight control. In response to these allegations, Gendreau agreed that the Institut sometimes provided general medical care for poor patients in its district because of its location. However, the use of radiotherapy to treat benign conditions such as TB was justified by the good results. He dismissed Chevalier’s accusations on the grounds that they were based on a lack of medical knowledge and on interviews with patients, who could not be relied on to know the true seriousness of their conditions.

This inquiry uncovered another factor that contributed to the Institut’s instability: the ill will of groups of Montreal physicians. The official who interviewed Chevalier reported that surgeons in the city who wanted to harm the Institut influenced the municipal department of social services. The surgeons’ hostility was based on Gendreau’s aggressive promotion of radiotherapy over surgery for cancer, an attitude which threatened the surgeons’ control of cancer cases and their incomes from performing operations. Things had reached a point where the surgeons had come to “detest” Gendreau and his organization.

Other physicians’ groups were concerned about general medical care being carried out at the supposedly specialized Institut. In May 1934 the Association of Physicians of Montreal East passed a unanimous resolution requesting that civic authorities ensure that the Institut confine itself to the treatment of cancer.
In December 1933 the Director of Health Services for the city wrote to Lessard that he was convinced the Institut was abusing the social service system since almost 50% of its workload was non-cancer cases. Lessard commissioned a special analysis of the Institute’s work by the Chief Medical Inspector of Montreal, Dr. J. Quintal, and the city’s statistician, Dr. E. Gagnon. Quintal analyzed 843 cases treated at the Institut for whom municipal assistance had refused payment, and his classification turned out to be exceedingly beneficial to the Institut’s survival. He classified 31 (3.7%) cases as cancer, 399 (47.3%) as “precancer,” and 413 (49.0%) as “conditions treated by physical agents.” “Precancer” was a vague term which referred to conditions which might evolve into cancer if left untreated, and which might be prevented from turning into cancer by treatment. However, there was only limited knowledge about what conditions might turn into cancer if left untreated, and Quintal included a broad range of illnesses such as tonsillitis, stomach ulcers, and various benign skin disorders such as psoriasis among the precancerous conditions. Radium treatment could also be justified for disorders such as rheumatic and arthritic ailments that responded to physical methods. In general, Quintal’s analysis justified the non-cancer work of the Institut. He recommended that the city continue to subsidize treatment of cancer and pre-cancer in poor patients, but he was less certain about the Institut continuing to treat patient who might simply benefit from physical treatment. He acknowledged the “immense service” provided by the hospital to poor patients of its district.

Quintal’s report had undoubted impact on subsequent decisions by the municipal and provincial governments to begin paying annual grants to the Institut. Effective 1 May 1934, the city and province agreed to pay the Institut annual sums of $20,000 and $50,000 respectively, on condition that 50% of the beds at the Institut be available for treatment of the sick poor and that the city and province be represented on the Institut’s governing board. The city also required that patients treated at the Institut have either cancer or a condition that was suspicious for the beginning of cancer.

“MORE APPRECIATED BY STRANGERS”

Despite the increased financial stability provided by these grants, the Institut faced other problems. The federal government’s purchase of the building and threat to turn it into a post office generated uncertainty about its location. In reality, the abandoned city hall was not a place conducive to patient care. According to one newspaper account, the crowded, dimly lit rooms created a stifling environment not ideal for treatment. In 1938 an official from the Ministry of Health, concerned particularly about the safety of individuals from the radiation equip-
Tarnished Adornment

ment, called it a "great shame." Nonetheless, no firm plans were ever made for relocation.

A more serious issue that affected the Institut's stature in Montreal medical culture was the tension between the Institut and other Montreal physicians and health organizations. The hostility of Montreal surgeons has already been mentioned, and was apparent to a visitor such as Saskatchewan's Dr. Earle Shepley, who noted Gendreau's strong resentment of their lack of co-operation. Gendreau's frustrations with the persistent lack of support of the Montreal medical profession were made clear in a letter to Provincial Secretary David of June 1934: "I regret to advise you that the Institute...seems more appreciated by expert strangers than by certain of our own physicians." Although the reasons for the negative attitude of the medical profession are not clear, it is likely that it stemmed largely from Gendreau's enthusiasm for radium and fear that the Institut, particularly in its treatment of benign disorders, was taking business away from private practitioners. The conflict between private practice and institutionalized medicine was to become a recurring theme in the establishment of cancer programs in Canada.

RADIUM FRAGMENTATION

The Institut's relationship with the English-speaking hospitals of Montreal was particularly uneasy. At the time of the opening of the Institut, the government intended it to supply radon to French and English doctors and hospitals throughout the province. To be sure, the official title of the Institut was "The Radium Institute of the University of Montreal and the Province of Québec." As has been mentioned, the Institut did supply radon to Montreal's two large English hospitals, the Royal Victoria (RVH) and the Montreal General (MGH), in the early 1920s. For a period of time, the radon output for one day a week was committed to these institutions. Shortly after the opening of the Institut, things seemed to be going smoothly: In November 1923 Dr. Howard Pirie, radiologist at the Royal Victoria Hospital, wrote to Gendreau thanking him for his "helpful co-operation in the matter of Radium." Within a few years, difficulties emerged. First, there were problems in getting the Radium Institute to recognize the competence in radium of Dr. Eleanor Percival, gynecologist at the Montreal General Hospital who had special training in radiotherapy and was in charge of the hospital's radium treatment. Next, Dr. Percival experienced frustration in obtaining adequate amounts of radon, especially during the Institut's temporary closure in 1925. The superintendent of the MGH, Dr. A. K. Haywood complained of the situation. He pointed out that despite the shutdown of the Institut, the radon plant was continuously producing radon, and it would be easier and cheaper to hire a technician to siphon it off for use at MGH than
have the hospital buy expensive radon from New York. At the time there were four cancer patients in the hospital, “and it does seem most unfortunate that the chances for prolonging their life may be lost.”

By 1928 the supply of radon to Montreal English hospitals had become erratic. In March of that year, Haywood complained to Gendreau that the unpredictable and intermittent supply of radon was causing disappointment to the patients and medical staff. The lack of prior notification about a lack of radon was “embarrassing to many of the patients whom we have come in on that day for treatment.” In the same year, Pirie, radiologist at the Royal Victoria Hospital, wrote with similar complaints. Initially he had been told that the failure of supply was due to the apparatus not working well; now he was being told there was none to spare, despite previous arrangements that the RVH would receive 24 hours’ production of the gas once weekly. “The result is,” Pirie said, “that patients have been kept waiting and have to be told that there is no Radium for them, operations have been delayed, and I get the blame for not having Radium available.” The Institut’s explanation was that the supply of radon was limited and that it was now being fully used by its own inpatients and outpatients.

It was largely in response to these frustrations that both the RVH and MGH purchased their own radium supplies and established their own radium departments. In February 1929, John C. Newman, President of General Steel Wares of Montreal (said to be the largest stove manufacturing company in the British Empire) donated $50,000 for radium to the MGH and in November of the same year, the RVH received a gift of $25,000 towards radium from a group of wealthy English-Canadian individuals. The Radium Department at the RVH began operation in the same year and that at the MGH, in April 1930. At both locations the radium used was in the form of needles and plaques.

The ostensible reason for the opening of these departments was to assure an adequate supply of radium for the hospitals’ patients, but two other factors played a role: institutional prestige, and suspicion that the Institut was favouring the French community. The sense of the English hospitals that the Institut was favouring French patients and French hospitals was encouraged by Gendreau’s often-flamboyant rhetoric describing the Institut as a distinctive French-Canadian enterprise. The Institut rebutted intimations of racial favouritism by saying it had difficulty supplying both French and English Montreal hospitals. Nonetheless, suspicions persisted, and in a statement issued at the time of the RVH’s acquisition of radium, the superintendent said: “... as a somewhat natural development this Radium has been devoted latterly to the exclusive use of the French Canadian Hospitals and their Radium Institute. The English-speaking hospitals had to do without. Consequently it has remained for philanthropy to step in and supply this need.” There also
may have been lingering resentment at the decision to place the Institut at the University of Montreal rather than McGill.

Radium thus succumbed to the racial tensions of Québec society in the early 20th century. However, the English-French split in radiotherapy was perhaps inevitable given the two solitudes of Québec’s medical world. One radiotherapist who worked in Montreal in the 1950s with Eleanor Percival recalled that there was essentially no communication or co-operation between the cities’ English and French medical communities until the 1960s.80

Even within the Montreal French medical community, radiotherapy was fragmented. Before the opening of the Institut, Dr. J. E. Panneton was administering treatment using x-rays at a “Laboratoire de Radiologie et d’Electrologie” at Notre-Dame Hospital.81 By 1923 Panneton had added radium to his armamentarium,82 and in 1931 he set up a private practice of radiotherapy including radium on Sherbrooke Street.83 Panneton’s practice was not inconspicuous, since he regularly contributed articles on radiotherapy to the Québec medical literature, but there is no evidence of any major collaboration between him and the Institut.

CONCLUSION: DECLINE AND CLOSURE

Thus by 1940, the provision of radium therapy in Montreal was fragmented among at least four institutions: the Institut and the radium departments at Notre Dame, RVH, and MGH.84 Elsewhere in the province, other departments had been established. Perhaps the most notable was that established at L’Hotel-Dieu Hospital in Québec City under the leadership of Dr. Leo Payeur in the early 1930s.85

It is clear from these events that the Institut du Radium never achieved the foothold in Montreal and Québec medicine anticipated by the rhetoric which surrounded its opening. Possibly the most telling signal of its relative weakness was that it was overlooked as the site for a major anti-cancer centre in Montreal, which was eventually established as the Institute of Cancer of Montreal at Notre-Dame Hospital in 1947.86 Indeed, the postwar period saw a steady decline in the Institut’s stature. In 1945, its ties to the university were severed,87 and the following year Gendreau resigned. Nonetheless, the Institut continued to see and treat an impressive volume of patients: in 1947 there were almost 16,000 consultations for detection and treatment of cancer, and 1,700 radium treatments—88% for the sick poor.88 Space does not permit a detailed description of its later years, but the Institut remained open until 1967, when it was closed amid acknowledgments that it had fallen behind other up-to-date centres. What had begun as a glorious project of science and medicine had become a somewhat quaint relic of an earlier era. In contrast, the Radium Institute in Paris, which had been the
model for the Québec institute, continued to thrive, buoyed by academic prestige and international recognition.89

The demise of the Canadian institute may be attributed to a constellation of factors which included financial instability, confusion over identity, lack of support from the medical profession, and competition from other institutions. A major factor was its chronically insecure financial situation which lead to repeated threats of closure in its early years. The history of the Institut du Radium demonstrated that the governmental provision of radium alone was not sufficient to sustain a program of radiotherapy. The application of radium to patients required more than the element itself; it needed medical, nursing, technical, and administrative resources to arrange and provide for care of patients before, during, and after treatment. The Institut’s instability came partly from the failure to project the large additional resources the provision of radium treatment would consume, particularly in a program where the treatment of poor patients would be subsidized. Later and more successful Canadian radium projects (such as the Saskatchewan Cancer Commission described by Shephard elsewhere in this issue) integrated radium as one element into a larger program of cancer control and care which required careful planning and ongoing support.

A fundamental problem was the lack of clarity about the Institut’s identity and goals. The initial vision of the government and university was of a research centre whose activity would promote the betterment of Québec society. Radium was to be the force which led Québec into a new era of science and technology. Both the government and university, however, appear to have been caught off guard by the volume of sick patients who clamoured for care at the Institut. The care of countless poor patients, greatly exacerbated by the Depression, dominated the Institut’s work and suffocated its research efforts. This problem was exacerbated by the need to generate income from patient care to support operations. This shift in identity from a research centre to a patient clinic was symbolized physically by the 1926 move from the university buildings to the Maisonneuve city hall. However, this relocation isolated it from the city’s academic medical heart and undermined the efforts to make it a major research centre. In addition, the lack of affiliation with a major hospital left the Institut without political and financial power.

Even in its new location, the Institut’s identity was unclear, as it began to function as a general hospital giving medical care to the poor patients of its district. These activities engendered the suspicion and hostility of the medical profession in general which further undermined its position. Unfortunately, this hostility seems to have been partly provoked by Gendreau’s own personality and style. His somewhat megalomaniac style and promotion of radium as panacea irritated other members of the medical profession, and indeed caused discontent among his staff. A
1946 petition from the staff requesting that he be removed cited his frequent absences, administrative carelessness, and lack of concern for the working conditions of the staff.90

Despite its troubled history, the Institut made an important contribution to the development of Québec and Canadian medicine. The clinical experience at the Institut provided the basis for articles published in Canadian and international medical journals which supported the use of radium treatment of various forms of cancer and drew attention to the Institut. Indeed, a review of the Index Medicus shows that despite his preoccupation with financial and administrative issues, Gendreau was able to publish nineteen articles on radiotherapy from 1928-40.91 It is difficult to assess its overall impact on Québec’s social and cultural development, but the optimism which surrounded its opening may have encouraged other scientific and technological projects. Even if it never became the scientific engine of Québec’s material progress, the Institut at least showed Québécois and Canadians that their province and country were not falling behind and were capable of absorbing and utilizing a new medical technology such as radium. Gendreau’s promotion of the Institut in Canada stimulated national interest in radiotherapy and cancer and gave confidence to other jurisdictions and organizations such as Saskatchewan who were planning their own programs. Moreover, Gendreau’s failure to enlist the full co-operation of Montreal doctors was an important lesson for cancer organizers in other provinces such as Earle Shepley of Saskatchewan, who as a result of his observations in Eastern Canada tried to ensure the co-operation of Saskatchewan doctors with the Saskatchewan Cancer Commission.92 Quite apart from its historical significance, the Institut played an important role in relieving the pain and suffering for thousands of patients who passed through its doors between 1923 and 1967.

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NOTES


6 Gendreau, La Fondation, p. 6.

7 Gendreau to David, 20 September 1920, QNA E8 76-03-000/1.


9 Gendreau, La Fondation, p. 7. To set the amount in context, Gendreau's request was more than half of the amount appropriated by the federal government ($750,000) to set up the National Research Laboratories in 1928.

10 Gendreau to Premier and Ministers of the Legislature of the Province of Québec, 26 January 1922, QNA E8 76-03-000/1.


12 Gendreau, La Fondation, p. 11.

13 Gendreau to the Premier, 3 February 1922, in QNA E8 76-03-000/1.
14 Gendreau, La Fondation, p. 15-16.
17 Vigod, Québec before Duplessis, p. 81-87.
18 Linteau, Québec, p. 436-37.
19 “Radium Shipment Due Here Tomorrow,” undated newspaper clipping. UMA D35/1554.
29 Extrait du procès-verbal de la 19ième réunion de la Commission des études de l'Université de Montréal, September 28, 1922, QNA E8 76-03-0001: Correspondence envoyée et reçue 1922-66.
30 Agrément daté November 11, 1922, QNA E8 76-03-0001: Affaires sociales: Institut du Radium.
32 Typewritten transcript from Le Docteur (1922), n.p., in UMA P22 N.193.
33 The events surrounding the arrival of the radium and the construction of the radon plant, including the quote from the Gazette, are described in Gendreau, La Fondation, p. 22-28.
34 Gendreau’s and Tashereau’s speeches were reproduced in Gendreau, La Fondation, p. 23-26.
35 Gendreau, La Fondation, p. 29-33.
38 “Notre Institut de radium est très apprécié,” undated clipping in UMA D35 1556.
39 Gendreau, La Fondation, p. 28-29.
40 Quoted in Gendreau to the President and Members of La Fondation, December 1933, QNA E8 1960-01-581.
43 For example, in 1923-24, $6000 to support a nurse, a technician, and general maintenance. UMA Fonds du Secretariat Général D35 1548.
44 Correspondence in QNA E8 1960-01-581: Institut du radium 1924-30.
45 Radium-Hôtel de Ville de Maisonneuve, handwritten extracts of minutes, QNA E8 1976-03-000/1: Correspondence envoyée et recue 1922-66.
48 "Les Instituts" (typewritten historical overview of all of Université de Montréal biological institutes), p. 3. UMA P22 N.673.
50 Gendreau to Taschereau, 25 October 1922, QNA E8 1976-03-000/1.
51 Linteau, Québec, p. 362-64.
52 Institut du Radium: Lettres Patent. UMA D3511537.
53 Gendreau to the President and Members of La Fondation, December 1933, QNA E8 1960-01-581.
55 For statistics on personnel and the testimonials, see QNA E8 1960-01-581.
57 Parizeau to Taschereau, 30 November 1931, QNA E8 1976-03-000/1.
58 Chevalier's accusations and Gendreau's rebuttal (as well as the allegation that the surgeons detested Gendreau) are outlined in a letter by an official (signature illegible) to Lessard, 26 October 1933, QNA E8 1960-01-581.
60 S. Boucher to Lessard, 7 December 1933, QNA E8 1960-01-581.
61 Quintal to Lessard, 3 January 1934, letter and report in QNA E8 1960-01-581.
62 For correspondence and agreements outlining these grants, see QNA E8 1960-01-581.
63 Nonetheless, Gendreau continued to press for more money. In 1938, he requested an increase in the grant to $150,000. Gendreau to J. Grégoire, 9 June 1938, QNA E8 1960-01-581.
64 Correspondence in QNA E8 1960-01-581: Institut du radium 1924-30.
67 E. Shepley to F. Monroe, 17 January 1931, Saskatchewan Archives Board R75 Monroe papers: File 19(e) January-February 1931.
68 Gendreau to Provincial Secretary David, 1 June 1934, QNA E8 1960-01-581.
70 Gendreau, La Fondation, p. 36.
72 Haywood to Gendreau, 9 March 1928, QNA E8 1976-03-000/1.
73 H. Pirie to Parizeau, 29 August 1928, QNA E8 1976-03-000/1.
74 Parizeau to Pirie, 31 August 1928, QNA E8 1976-03-000/1.
77 "Gift of Radium Is Made to Royal Victoria Hospital," undated clipping from November 1929, in McGUA, MGH records, scrapbook, p. 400.
78 Parizeau to Pirie, 31 August 1928, letter in QNA E8 76-03-000/1.
79 Quoted in "J. C. Newman Makes $50,000 Gift to Hospital to Purchase Radium,"

80 Dr. Winifred Ross, personal interview, 2 November 1999.


82 Advertisement in L’Union Médicale du Canada, 52 (1923): 32

83 Advertisement inside back cover of L’Union Médicale du Canada, 60 (1931): 12.

84 In addition, Dr. E. P. Grenier was working as “radium therapist” at L’Hotel Dieu Hospital. Little is known of his practice.


87 L. Lortie to M. Faribault, 21 December 1950, letter outlining the Institut’s history and administrative problems in UMA D35 1537.

88 Memoire sur un projet, p. 4.


90 Requete du personnel de L’Institut du Radium au Bureau des Directeurs, in QNA E8 76-03-000/2.
