

**THE EARLY HISTORY OF PATHOLOGY  
AT QUEEN'S UNIVERSITY AND HER  
TEACHING HOSPITALS  
(until 1966)**

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## 1. PREAMBLE

The city of Kingston, the site of Queen's University, is steeped in the early Canadian history and thus are the developments and fate of its major institutions. This close link in development with the town is not necessarily a feature of all universities in Canada for a good number of these were built in long established municipalities.

To understand and follow the development of an institution of higher learning that is home, amongst others, to the Faculty of Medicine of which Pathology is one of its disciplines, it seems not only useful but unavoidable to provide (even if briefly) a historical account on the town (Kingston), the (major teaching) hospitals and the university, prior to addressing the actual subject under consideration, i.e., that of Pathology

It had been debated often, particularly in the past centuries whether the establishment of a university with a School (or Faculty) of Medicine depended (or should depend) upon the existence of the hospital(s) in the town. In the mediaeval times a university was an autonomous institution whose aims of scholastic and investigative goals were entirely independent from an association with more mundane, or "practical" establishments like the hospitals. This attitude may be exemplified by the lack of formal relation of the University's Department of Pathology at Oxford, England (with its centre or "seat" at Sir William Dunn School of Pathology) and the main municipal hospital (Radcliffe Infirmary) that "survived" even until relatively recent times. Actually, there is no need to exemplify the existence of these two separate "solitudes" so far away in an ancient university (Oxford) because in the past an almost identical situation had been prevailing at least at some Canadian universities. Fortunately, the times have been changing over the past several decades and it would be unthinkable today to condone the existence of two "separate solitudes" of Pathology (or any other discipline) in the same university setting. The former argument that the purely scholastic-academic endeavours must not be "diluted" ("contaminated"?) by practical aspects of the discipline (diagnosis and prognosis) proved untenable. Not only are resources derived from practice required for educational purposes (at undergraduate, postgraduate and graduate levels), but also because some of the enormous advances in medicine were made by knowledge derived from clinical observations. These in turn were explored further by scholastic approaches and "pure" science. Parenthetically, the above developments apply also to specialties in Medicine other than Pathology.

It is not a simple task to coordinate in a narrative a "synchronized" information pertaining to all three major elements involved in this historical account, i.e., the development of the town (city), the hospitals and the establishment of the university with inclusion of the Medical Faculty (and Pathology). Therefore, some information will not follow in chronological order or may have to be repetitious.

## 2. HISTORICAL BACKGROUND

The earliest settlement at what is now Kingston, Ontario began in 1673 when Count Louis de Frontenac, the Governor General of New France, landed at Cataraqui. It was here that over the next approximately 100 years, Fort Frontenac was established and slowly developed from a post for fur trading with the Iroquois to a military base. The latter was intended to protect the extension of New France into the interior of North America.

LaSalle received the seigneurie of the fort in 1675 and encouraged the development of it by settlers. He had the fort rebuilt substantially but being an explorer moved about considerably (extending the French influence widely to the far south). As time went by, the fort suffered damage from attacks by natives and in the 1740's it was no longer a defensive post. War broke out between the French and the English in 1744; in 1758, the British attacked the fort and it surrendered. Its usefulness was at an end and it was deserted by both the French and the British.

By 1763, when Canada became a British Colony, there were two official "military surgeons" at

the "Fort", and in a small building, "The Garrison's Hospital", local residents could obtain needed medical care.

The area came to life again in 1783 when land was needed for the United Empire Loyalists as the American Revolution came to a close. In preparation for the arrival of the Loyalists a hospital was built in 1783. It was a small log house on the shore just west of Fort Frontenac which was enlarged by the addition of a second floor. With Government help, the Loyalists developed an agricultural community in the town that was largely of a military and naval nature. By 1788, the township, called by this time, Kingston, was homesteaded primarily by United Empire Loyalists from the United States.

During the War of 1812, Kingston was not only a military base and arsenal but also an important naval base - particularly after the construction of the Rideau Canal. The Garrison's Hospital (at the foot of what is now Brock Street) was an important focal point in the town, but more hospital space was needed. Thus, by 1816 Kingston had four other hospitals. They were of poor physical state and those using these facilities were the town's destitute, some army but largely navy personnel. The Navy hospital on Point Frederick opposite Fort Frontenac later became the residence of the commandants of the Royal Military College. There was a military hospital south-east of Fort Henry on Point Henry, and the remaining three hospitals were in the town.

There is little information relating to pathology being practiced in those days, except for post-mortems carried out by the medical staff. It is of interest that the first regulations pertaining to the practice of medicine in the region were enacted in 1795, and the first Medical Licensing Board of Upper Canada was established in 1818.

### 3. THE MAIN TEACHING HOSPITALS

In the early 19<sup>th</sup> century hospitals did not enjoy the same public acceptance they do today. Sick people were cared for privately in their own homes by family or friends and the occasional visit from a local physician. The poor and destitute who did not have such support depended on the community's charitable conscience. If a hospital existed, it was at best unequipped, poorly staffed and overcrowded.

#### A. KINGSTON GENERAL HOSPITAL

Kingston General Hospital (KGH) began in above atmosphere. In 1819 the Kingston Compassionate Society (after the late 1820's called the Female Benevolent Society) established a makeshift, winter-only hospital (providing largely nursing care) in a blockhouse at Murney's Point. Later the hospital was moved to a house in the West and King Street area. Infectious diseases were a considerable problem in those days and the hospital was not adequate to meet the needs of a community prospering during the years of Rideau Canal construction and increased immigration. During the cholera epidemics of the 1830's, the hospital provided the only institutional care in the area. By 1831 local residents decided that a general hospital was needed to be built with public support. A building fund raised in one evening alone amounted to £600. The Government contributed £3000 and the construction on the land on King Street West began in 1833. Labour shortages (due to cholera epidemic) delayed until 1835 the completion of the unpainted hospital, lacking baths, toilets and furniture. The building was not used as a hospital for ten years. With the threat of a widespread rebellion in 1837 the building was leased for use as military barracks. In November 1838, after the Battle of the Windmill near Cornwall, the Kingston Hospital was used for the first time as a hospital to house wounded American prisoners. Of the 20 men sent to the hospital two died of wounds. Some remained until spring of 1839 and upon their leaving it was no longer needed for the government. By then normal life had been returned to Kingston and the sick poor became once again the responsibility of the town.

In 1839 the Presbyterian community of Kingston began a new movement involving the hospital: while one committee was preparing a petition to the Legislature for the establishing of a college in Kingston, another was concerned with finding an accommodation for it and petitioned the

Legislature to allow the temporary occupation of the hospital by the proposed college (university). An Act authorizing the lease (for that purpose) “for such term of years and such annual rent as His Excellency, the Lieutenant Governor would deem proper” was passed in February 1840. Whereas tenders were called for needed repairs of “the hospital near Stuart’s Point”, it was never used for that purpose because the cost was considered excessive and so it stood empty. When Kingston became the capital of the “United Canada” (1841-1843) the “hospital” was leased to the Government as a temporary Parliament. Because of Kingston’s location, and thus the vulnerability to the attacks from the USA, the Capital was moved to Montreal. The last sitting of Parliament was in 1843 – when the building again became vacant.

After years of planning, delays and alterations, the hospital was opened in 1845. The Female Benevolent Society took over two areas of the building and the hospital became a hospital for the first time, treating a total of 82 patients in the first year. Dr. James Sampson, [one of the earliest medical men in Kingston (circa 1815)], who was the local Medical Officer of Health during the cholera epidemic in the 1830’s was instrumental in the development of the KGH “for the care of the sick poor of the town”. He was also one of the founders (between 1838 and 1841), along with Drs. John Stewart, John Dickson and Horatio Yates, of Queen’s College (University) – ostensibly the “Edinburgh University of the New World”. Dr. Sampson was the town Mayor at the time of the 1847 typhus epidemic, and in 1850, became the leader of the General Hospital’s final incorporation and its major reorganization. This plan “permitted medical students to walk the wards” and the KGH became the official teaching hospital of the MEDICAL DEPARTMENT of the UNIVERSITY OF QUEEN’S COLLEGE (vide infra).

By 1849 the hospital administration became a great burden for the Female Benevolent Society. Thanks to the efforts of John A. Macdonald, Parliament passed a bill incorporating KGH as a municipal institution. The new Board of Governors of the hospital had a building, but little else. Total value of the entire holdings was approximately £500. Beyond a meager, uncertain commitment from the Government, virtually the only source of hospital’s income were public donations, but the expenses for the straw for patients’ beds, and “rations” of dark bread and poor stewing beef (bought from a local man for six pence half penny per person) were rising. As patients had to be “genuine charity recipients” money could not be raised by charging fees. Even as late as 1873 only \$540 was derived from paying patients. By 1854 the hospital was all but broke, but the community continued to supply food and bedding, and local service clubs held activities to raise money. Throughout these financial difficulties, the hospital continued to serve growing numbers of Kingston residents; in 1856, 565 people were admitted. Infectious diseases continued to be the major medical problem, and there were 33 deaths. Despite financial problems, KGH made strides to upgrade and improve its knowledge and service. Introduction of ether and chloroform anaesthesia facilitated surgery, and with refinements in instrumentation, cataract surgery became a common procedure already by the 1850’s. However, post-operative infection remained a major problem.

Because Kingston had a medical school, newspapers across the province reported that Kingston residents had access to a superior medical treatment. In the 1880’s, KGH was used by all Kingston citizens, including those who did pay (Watkins Wing, already in 1862) for the service. Funds for expansion were donated in the 1890’s (an obstetrical and gynecological wing, an operating room and a laundry). A fire in the main wing in 1897 caused severe damage but the city residents generously donated sufficient funds to rebuild and re-equip it.

Once established, the KGH in the 20<sup>th</sup> century continued to expand and develop. For instance, the hospital acquired x-ray equipment, just five years after its discovery in 1900. An important step was the establishment of the Women’s Aid Society in 1905, a group that raised money for the hospital and continued to do so until it evolved into the KGH-Auxiliary. The nursing school that opened in 1886 was the third such school in Canada. Additional space for patients and services were provided with a new building in 1914 (Empire Wing). After WWI (1923) a City Isolation Hospital (later: Bawden Wing) and a Heating Plant were added on KGH property.

A major spur for the KGH-expansion took place at the end of the WWI with the 15-year-plan of the Chancellor of Queen's University, Dr. James Douglas, who offered \$100,000 for redevelopment of KGH's teaching and research facilities. This has had a special significance for Pathology, as one of the new buildings opened on October 16, 1925, became the permanent "home" of the Department of Pathology (Fig. 5; vide infra).

The next expansion occurred in the 1947-53 period, with the addition of more adult beds, a cancer clinic and specialized investigative laboratories. The demand for upgrading and new services was met as an additional large 600-bed wing was opened in 1947 (Victory Wing) to replace the beds in the older wings. A major fund raising effort by the Shriner's resulted in the construction of the KGH's Children's Hospital "Angada" ("to bring help to you"). It was the only Children's Hospital between Montreal and Toronto, opening its doors in 1953. The unprecedented growth and broadening of modern services continued throughout the 60's. It may be exemplified by the number of laboratory tests that increased by 815% from 141,316 in 1960 and the addition of a modern, seven story building (the Connell Wing (CW))

#### B. Hôtel Dieu Hospital

The development, the history and the relation to Queen's University as a teaching hospital of the Hotel Dieu Hospital (HDH) all differ from those of KGH. For those reasons the relation to Queen's University will be cited here (by some examples), whereas this aspect of the KGH will be considered in the sections to follow.

In 1845 five nursing sisters, members of the Religious Hospitallers of St. Joseph, came from their Montreal mother-house and opened a 12-bed Hotel Dieu Hospital in a small house on Brock Street: 6 beds were for men downstairs, and 6 for women upstairs. For 46 years the HDH served Kingstonians in its original buildings on Brock St. In 1891 it purchased Regiopolis College and its grounds (covering the complete block: from Sydenham to Bagot between Johnson and Brock Streets).

The physical facilities for Pathology services consisted, until 1950, of four, tiny, dark basement rooms in the old limestone wing on the corner of Brock and Sydenham Streets. Two rooms were occupied by laboratories, one was a morgue, and one served as an office. In 1950, a "modern" Centenary Wing built on the Johnson Street side of the hospital housed new laboratories, but the morgue remained in its dungeon-like confines in the basement of the Brock Street hospital section. The new laboratories, although partly subterranean, were spacious and served the hospital for the next sixteen years.

Clinical teaching also occurred in the early days in the wards, lecture room and operating theatre of the HDH, paralleling that done in KGH, although on a small scale. With the increase in hospital beds, Drs. Sullivan and Ryan were able to hold their weekly clinics at HDH, especially for the benefit of the Queen's medical students. A student petition encouraged the faculty to use these extra facilities. As early as 1893 Dr. Mackenzie offered clinics in orthopaedic surgery at the HDH. In 1900 an attempt was made to formalize the clinical teaching at the HDH in relation to the university. The principal and the secretary of the faculty were authorized to request the KGH to pay HDH \$75 per session, from the moneys it received from the university, to pay for students' admission to Dr. Ryan's clinic at HDH. No evidence exists that KGH complied, but by 1905 the faculty was paying directly the KGH \$604 and the HDH \$120 hospital fees per annum. About that time Dr. Hereld's course in clinical medicine covered the principles of medicine in relation to patients. Amongst others it covered the diagnostic importance of the chemical and microscopic examination of blood, expectoration, vomited matters, gastric contents, urine and serous effusions. Patients in the wards of HDH (and KGH) illustrated the lectures.

Except for the above quoted and the outstanding work of the Honourable Dr. Michael Sullivan, his son Dr. Vincent Sullivan and Dr. Ryan, little direct or overt cooperation in between Queen's medical faculty and the HDH occurred until years later, when in late 1960, confessional and professional barriers were eventually surmounted.

## 4. QUEEN'S UNIVERSITY AND MEDICINE

### A. The Beginnings

As early as 1832, one year after the constitution of the Presbyterian Church of Canada, the first steps were taken towards the foundation of a college at Kingston. The Synod of the Presbyterian Church drew up minutes stating the necessity for such an institution and urging the Government to establish it. The population of Canada at that time was rapidly increasing, and only a very small number of teachers and ministers were obtainable from the Mother Country. When the yearly representations to the Government were unsuccessful and the education of the Canadian youth became increasingly pressing, it was determined in 1838 to found a college within the bounds of the Synod. The aims of the College were to be sufficiently broad to meet the needs (or requirements) of all classes of the community. In 1838, a commission was appointed to solicit subscriptions for its endowment, and to apply for an Act of Incorporation to the Provincial Legislation. The project met with hearty support and the subscriptions were offered not only in Kingston but also in Toronto, Montreal, Hamilton, Cobourg and other places. Men of great intellectual and moral force [amongst them: Mr. (later: Sir) John A. Macdonald] provided their support too. The Church of Scotland continued to encourage the plans promising also financial support (albeit for a limited period). By the end of 1839 the necessary initial steps for the founding of the College were completed. In 1840, under the auspices of the Honourable Wm. Morris, the provincial Act of Incorporation passed under the title of the "University of Kingston". Since the College desired to be known as "Queen's College", in May 1840 Her Majesty, Queen Victoria, was petitioned to grant the College a Royal Charter and thus be known as "Queen's College, Kingston". The petition was granted and the Royal Charter passed the Great Seal on October 16<sup>th</sup>, 1841. The previously granted Provincial Act of Incorporation was annulled. The first lectures at Queen's College were begun on the 17<sup>th</sup> of March 1842, with Rev. Dr. Liddell as her first Principal, in a frame building on Princess Street. There were three students in attendance, two professors and the Principal. The number of students grew consistently and in 1844 amounted to twenty-one. This necessitated larger quarters and thus a move was made that same year to two stone houses on William Street. NB Other sources indicate that "Queen's College opened its doors on Colborne Street in the early spring of 1842 to 15 students, a Principal and one Professor".

In summer of 1842 the Board of Trustees resolved "that to carry out more fully the designs of this institution it is necessary to establish a Medical Faculty". Discussions between the University and the local physicians produced no action until 1854 when eight students could not graduate in Medicine from the Trinity University in Toronto because they refused to sign the "Thirty-Nine Articles" in order to fulfill the Anglican religious requirements. These students (and one of their teachers, Dr. James Bovell), petitioned Queen's Senate for admission that would allow them to complete their studies and graduate as MDs. It was known namely that at Queen's the only religious obligation was the acceptance of the Westminster Confession of Faith by the professors – not by the students. With the encouragement of John A. Macdonald, a young member of the Legislative Assembly, and the agreement of the University's Board and Senate, five local physicians and surgeons were appointed as lecturers for a trial session of the newly created "Medical Department". Dr. J. Sampson chaired the formative meetings of the School which consisted of two lecture rooms and an anatomical dissection room; it opened in November 1854 in the rented upper floors at 75 Princess Street. Pathology was not yet an established course. By 1855, Dr. Robert W. Meadows, a surgeon, taught Histology to the students using first class British microscopes! Probably this was the forerunner of the University's Department of Pathology.

Early in 1855 eight students of the Toronto group and one other graduated as MDs. Fourteen other students were in the junior years. The above trial session proved to be such a success that the Queen's Board voted in June of 1855 to establish officially a Faculty of Medicine in Summerhill as an integral part of the University and her Arts and Divinity Faculties. The quarters in the Summerhill became soon overcrowded and the dissecting room's location in the basement (without ventilation)

quite inconvenient. Thus, the decision was made to erect a building in the rear of Summerhill for the primary use of the Medical Faculty (the “Old Medical Building”). The \$1000 granted annually by the Government for the use of the Medical Faculty and the sale of some Commercial Bank stock provided the funds for the building. It was built during 1858 and was ready for teaching of the 1859/1860 academic session. In the following couple of years the Faculty urged the University Board to seek clinical teaching facilities at the KGH to which the KGH Governors agreed (vide infra).

Since its establishment, the popularity of the Faculty rose steadily and the number of enrolled students increased considerably . Fifty-three students were registered already for the 1856/57 session. However, between 1860 and 1866 the student enrollment gradually declined, largely because of the intramural disagreements and squabbings of Faculty Members. When the Members were requested to accept in writing the University charter’s confessional requirement, the majority decided to secede from the University and form a separate Medical College of Kingston (The Royal College of Physicians and Surgeons at Kingston, known as “The Royal”). The then Principal Snodgrass recommended, and the Board of Trustees voted to discontinue Medicine at Queen’s on August 29<sup>th</sup>, 1866.

The Royal received an Act to Incorporate by a royal assent on August 15, 1866. Those who formed the Corporation (but one) and became Fellows of the College were members of the discontinued Faculty of Medicine at Queen’s. The severance from Queen’s was neither complete nor left ill feelings. The Royal continued to use the “Old Medical Building” for an annual rent of \$250, but in 1879 was requested to vacate it. For a short period the Royal occupied the former “House of Industry” on Montreal Street and moved later to the Commercial Bank Building on lower Princess Street. The students’ mandatory four-year-course followed the curriculum outlined by the Medical Council of Canada and throughout the 1870’s and 1880’s it was in keeping with the standards current in British and American medical schools. The high standards of the Royal may be indicated by the appointment of Dr. (later Senator) Michael Sullivan, Professor of Anatomy and Surgery (and the Surgeon to the HDH), as an examiner for the Medical Council. Despite its ten-year-separation the Royal remained academically affiliated with Queen’s, in keeping with its own Act of Incorporation. During Royal’s existence 110 licentiates were granted a Queen’s MD-degree on matriculation and payment of required graduation fee. One of the great contributions of the then Principal Grant was his “repatriation” of the Royal to the campus as a first step in its total re-acceptance into the University as Queen’s “reborn” Faculty of Medicine in 1892.

Another significant chapter in the early history of Queen’s Medicine began in April 1880 with the introduction of summer sessions at the Royal and Queen’s for ladies only (four were enrolled in the first session). As few registered for the next summer session, the classes were combined subsequently with those of men. The sessions of 1881/82/83 represented the first attempt at medical co-education in Canada. Sadly, the anti-feminism of male students who threatened to resign and “switch” over en masse to other institutions, forced the Faculty to discontinue admitting the female applicants.

However, the Faculty, (the then) Principal Grant and Kingston citizens decided instead to establish the Kingston Women’s Medical College. The city generously provided a lease of the Ontario Hall with its outstanding lecture theatre, and the professors of the Royal taught at this College exactly as they did in the (male) counterpart on the campus. At the end of the session, in the spring of 1884, three ladies graduated from Queen’s with the degrees of MD, CM. The College closed its doors in 1895 merging with a similarly successful Toronto Women’s College. This institution in turn ceased independent existence when the University of Toronto eventually accepted women into the Faculty of Medicine in 1906. Queen’s began re-admitting women fully to the Medical Faculty only in 1943.

To accommodate the growing expansion of the Faculty’s Basic Sciences, the building of a New Medical Building was completed in 1908 near the Old Medical Building. Through a generous donation of \$400,000 by a distinguished medical alumna, Dr. Agnes Craine (Queen’s, 1888), the Craine Building, erected in 1937, “completed” the “Queen’s Medical Quadrangle”. With the accompanying establishment of the Chair of Biochemistry, it became the focus of that discipline at Queen’s. The

expanding Department of Physiology found its new home in the Abramsky Hall, built for its accommodation in 1957 by the generosity of Kingston's citizens.

Already in 1925 the discipline of Pathology found its own domain and a permanent home in the Richardson Laboratory adjacent to the KGH (vide supra and infra). In 1959 the University built Etherington Hall next to and connected with the Richardson Laboratory. This building was quite symbolic of the "merging" functions of Queen's Faculty of Medicine and the KGH. It provided facilities for expanded diagnostic service as well as research, and space for teaching and offices for the chairs of medical departments at the KGH. All these features tied the KGH and the Queen's Medical Faculty so closely together that the dividing line was not at all clear.

This closeness and interdependence between the two institutions began much earlier (vide supra) and continued throughout decades. Often, important and novel initiatives and ideas involving Medical Faculty originated within KGH. For example in December 1918, the Medical Staff of KGH met to plan the reorganization considered necessary when staff members would return from WWI service. Disruptions of the war years convinced the Medical Staff and the Board of Governors of the need for a better organization. They reached an agreement on organization of the services and expansion of the Hospital Medical Staff and on the Queen's Medical Faculty, setting up seven services to include outdoor and indoor patients. The Head of each service at the KGH was to be Head of the corresponding department of the University, but it took many years to share the incomes of common appointees. It seems that the first appointee whose stipend was shared by Queen's (as Clinical Tutor) and KGH (as Senior Intern) in Anaesthesia (May 1949) was Dr. James Mahood (Queen's 1947).

Slowly through the late 1880's Principal Grant turned the Royal away from affiliation with Trinity University and towards close union with Queen's. The official ceremonies marking the reopening of the Medical Faculty took place on Friday, October 14, 1892 in Convocation Hall of the Theology College, presided over by University Chancellor, Sir Sanford Fleming. Principal Grant as one of the speakers stated "Medicine should progress along 3 lines: clinical investigation, practical anatomy and the study by means of microscope of normal or diseased tissues, and bacteriology". The Faculty appointed professors either to the existing disciplines or departments (Prof. Anglin, a surgeon, was professor of Pathology in the absence of the latter as a distinct department), and established standing committees to supervise the laboratories of physiology and pathology in September of 1892.

Within a short time of the re-establishment of Queen's Medical School (1892), the students were to accompany their professors on "rounds" in KGH. This followed an earlier official action by the University and became an integral part of the medical curriculum. In the HDH this attendance was sporadic and depended on the individual commitment to teaching by the attending staff. The students acted for their chiefs largely in the role of surgical "dressers". The more competent students were appointed to be House Surgeons for six months (in KGH or HDH) after graduation. Later St. Mary's of the Lake and Kingston Psychiatric Hospitals were increasingly involved in clinical teaching that became the life blood of the symbiotic relation between the University and the hospitals. Each could have existed separately but the Medical School could not have existed at all on her own. In addition to provision of the major clinical teaching areas, the hospitals have provided operating facilities, laboratories, x-ray and all the different auxiliary departments. The KGH erected its new postmortem room; it also promised a first-class theatre for operations and proposed a maternity wing to be built in the near future. Principal Grant courteously acknowledged the contribution that "the new Hôtel Dieu with its admirable equipment would undertake the education of Queen's medical students". This referred also to the teaching of surgery. In the early years surgery was divided into principles and practice of surgery, and clinical surgery. As the university senior surgeon, Dr. Michael Sullivan was expected to deliver over 100 lectures on the more theoretical aspects of surgery, either in the University's classroom or at the HDH. The lectures included a course of surgical anatomy and surgical pathology; i.e, the latter being a subject for many years already prior to the 1892 "return" of Medicine to Queen's.

A major reorganization of the Medical Faculty was necessary following the WWI with the returning of the faculty members and students to Queen's. An attempt to transfer the Medical School, lock stock and barrel, to Ottawa or to McGill failed because of the Queen's loyalists (vide infra). The Medical School's increasing reputation in the post-war years was built on the devoted clinical, teaching and research work of its own alumni. Towards the first century of growth Queen's Medical Faculty fulfilled Abraham Flexner's 1909 benevolent assessment of Queen's recognizing that "Kingston (Medical School) represents a distinct effort toward higher ideals".

## B. EARLY RESEARCH IN MEDICINE

From the early 1900's there has been a steady development of research in the Faculty. In the 1907 calendar the first mention was made on the availability of the "1851 Exhibition Research Scholarships". The research laboratories established in the New Medical Building were noted in the 1909 calendar. The first identifiable medical researchers of the Faculty were Dr. A.P. Knight whose work saved the Nova Scotia lobster industry and Dr. W.T. Connell (vide infra) who rescued the Eastern Ontario cheddar cheese processing affected by a bacterial blight. By 1925 candidates for the degree of DSc (Med) were required to have carried out "original scientific work". The research activities grew considerably and in early 1930's details of Faculty's medical research appeared in the Report to the Principal by the Committee on Scientific Research since 1939 the Faculty's research efforts were directed largely to the war related projects. During WWII the major emphasis in research was to study problems identified by the Defense Research Board and the Associate Committee of Medical Research. Dr. Harold Ettinger, Professor of Physiology and later Dean of Medicine (1949-1962), himself an outstanding researcher and a guiding light for the Faculty for many years, was the Honorary Secretary of this organization.

Queen's Faculty of Medicine entered a truly modern era of scientific, basic and clinical research following the end of the WWII. The results gained wide recognition, eg., the early 1950's major program of Arctic research, directed by Dr. Malcolm Brown (Meds'38) (later President of the Medical Research Council of Canada). It also initiated the interdisciplinary approach at Queen's stimulating active programs of investigations in all Basic and most Clinical Departments of almost all areas of Human Biology. Amongst these were: cardiovascular and hepatic diseases; cancer; lipid and calcium metabolism; hormonal release; diabetes; bacterial toxins; pediatrics; teratology; neurosciences; drug action; viruses; gastrointestinal disorders; electrolyte balance; electromyography; amputee rehabilitation; effects of radiation treatment and thyroid function. In the early '60's the new approaches to the diagnosis of inborn errors of metabolism and the established cytogenetic laboratories began a longlasting impact upon several domains of modern medical research which received much acclaim nationally and internationally.

## C. BASIC SCIENCES AT QUEEN'S

The buildings on the Medical Quadrangle initially housed virtually all basic sciences and in time accommodated the various laboratories that grew in size and scholastic/investigative activities from the tiny location in the Summerhill and the Old Medical Building. Dr. W.T. Connell (vide infra) set up a laboratory for the University that by 1889 offered a complete range of testing services for the medical profession of Eastern Ontario (microscopic, bacteriological and chemical). He also published a textbook in 1899 whose 3<sup>rd</sup> edition appeared in 1913 ("A Laboratory Guide in Practical Bacteriology"). His laboratory was first in the Old Medical Building, moving for 1907/08 to the New Medical Building. When the University briefly had a Dairy School and a Veterinary Science School, Dr. Connell contributed appropriately to their curricula. The government of Ontario put him in charge of the Public Health Laboratory in Kingston in 1905. It undertook the bacteriological examination of sputum, pus, throat swabs, urine, and checking milk and water supplies. During his brief stint in the Army overseas (1915) the laboratories were run very efficiently by Dr. W. Gibson.

### i. Bacteriology

Bacteriology was not a separate Department at Queen's until 1891 when the Medical Council of Ontario added it to the medical curriculum and made it a required course. It was taught as part of Pathology in the University's Basic Sciences Buildings by Dr. W.T. Connell since 1896 (vide infra) and became a University Department with Dr. Connell's "transfer" to the Department of Medicine in 1920. Dr. Guilford B. Reed was appointed then Professor and Head of the Department for which he received \$2800 per annum. He was a Nova Scotian who studied at Acadia and received a PhD from Harvard University. His thesis was on the function of respiratory enzymes. He had first come to Queen's as an assistant Professor in Biology with a cross-appointment in Pathology. It is of note that McGill did not have an independent University Department of Bacteriology until 1930 and the University of Toronto not until 1942. Amongst many contributions to the field, in 1918-1919, Dr. Reed carried out considerable investigative research with the Spanish influenza virus and the production of a vaccine for it. Later, he studied the growth rate and structure of bacteria and the serology of the mycobacterium tuberculosis; he investigated also the patients affected by biological and gas warfare for the Department of National Defense. In 1952, he was elected President of the Royal Society of Canada. When Dr. Reed retired in 1954, his departmental colleague Dr. John H. Orr was appointed Professor and Head. Upon his retirement in 1963, Dr. Norman Hinton (Queen's '50) chaired the Department. In the late sixties he succeeded in changing the name from the "Department of Bacteriology" to that of "Microbiology and Immunology".

### ii Chemistry

In most medical schools of the early times, chemistry was an essential and important "basic science" subject. There were chemistry professors or lecturers and as faculties slowly expanded, full university Departments of Chemistry were established. In Kingston, the early teachers included Revered Dr. Williamson of the Arts Faculty (circa 1854), and Dr. O.S. Strange, who lectured on the subject in 1855. He was one of the original founders of the Medical School and basically a surgeon. Dr. Adolf Wirtz of New York was a visiting professor (1856), and was followed by George Lawson, a PhD botanist, who held an appointment in both the Arts and Medical Faculties. He organized a student analytical and microscopic laboratory (1858) but left Kingston in 1863 to become Chair of Chemistry at Dalhousie. For a short while, a very controversial Dr. Robert Bell, a geologist, taught chemistry around 1864. Dr. Richard A. Reeve, was a professor of chemistry at the Royal from 1866 to 1869. He resigned to pursue a career in Ophthalmology and eventually became a Dean at Toronto. Professors W.L. Goodwin (1887), and H. Nichol (1892) lectured and arranged student practical chemistry laboratory sessions on chemical physics, chemical physiology, and inorganic and organic chemistry. In 1895, A.P. Knight, principally a physiologist/biologist, and one of the first full-time professors at the Queen's, developed a physiological chemical laboratory program in the renovated Old Medical Building in 1901, moving it by 1908, to the new Medical Building. Toxicological investigations were part of practical work and suitable apparatus for experimental investigations was available. Between 1914 and 1920, Dr. A.H. Lothrop, from Columbia University was Professor of Biology and Medical Chemistry and Dr. J.D. Halverson was a lecturer in Chemistry in 1924, Dr. John Logan, who taught physiologic organic chemistry, was an Associate Professor in the Chemistry Department which, by 1925 was located in the new Richardson Laboratory. The first record of testing by chemical examination at Queen's (and for the Eastern Ontario area) for clinical purposes points to Dr. W.T. Connell's activities (vide infra).

### iii Biochemistry

The new Department of Biochemistry was established with the opening of the 1937 Craine Building (see supra). It was headed by the Craine Professor, Dr. R. Gordon Sinclair (Queen's, 1924) who also obtained a PhD from the University of Rochester and was a leading investigator of lipid metabolism. He received an annual salary of \$4500 at this time. Dr. John Logan became one of Dr. Sinclair's departmental members and by 1942, Dr. Eldon Boyd joined them. Over the next few years they set up an "Honors Program" – for their trainees. Amongst them were Drs. A. MacLeod and

Malcolm Brown, both academically inclined clinicians, who cultivated the basic sciences. Dr. Sinclair was an effective warm-hearted teacher and became a popular man “on campus” as well as in his Collins Bay community. In 1942, the KGH “contracted” Dr. Sinclair and the University Department of Biochemistry to carry out the more complicated chemical tests. In 1943, Dr. Sinclair was active in the movement to return “co-education to Queen’s”. The entire University was deeply saddened, when at the peak of his career, Dr. Gordon Sinclair died in a drowning accident in 1949.

Dr. John Logan became Acting Head for two years and in 1953 when he passed away, Dr. James Beveridge, a graduate of the University of Western Ontario, became the Craine Professor. He headed the University Department, and the Graduate School at Queen’s and introduced a number of innovative research activities which were acclaimed nationally and internationally. He was very popular on the campus and an excellent teacher, and later became a member of the Royal Society. In 1964 he left Queen’s to assume the Presidency at Acadia University in 1964 and was succeeded by Dr. Paul Hagen who came from the University of Manitoba.

#### D. CLINICAL LABORATORIES AT HOSPITALS

It is difficult to assess from the available sources by whom and which laboratory tests were carried out at or for (the forerunners of) the KGH prior to the existence of the clinical laboratory services established in 1889 at Queen’s by Dr. W.T. Connell (vide supra). With the move of the laboratories to the Richardson Laboratory in 1925, Dr. G.B. Reed was in charge of Bacteriology and Dr. J.F. Logan supervised the physiological chemistry (although Physiological Chemistry was taught by 1920 by Dr. D. Lothrop). With the extension of testing to novel areas and the addition of new techniques, the demands upon the Richardson Laboratory could not be met, even when the more complicated tests were sent to the University’s Basic Sciences Laboratories.

Discoveries and new techniques in blood work brought an offer from Queen’s Medical Faculty in 1926, to help finance the purchase of certain laboratory equipment. The Medical Staff indicated that facilities for work on blood chemistry were essential if the Hospital were to keep abreast of medical science. And the possibility of such clinical studies was of equal importance to the medical students. Dr. J.F. Logan of Queen’s who supervised the physiological chemistry in the laboratory, emphasized the interdependence of teaching, research and medical care. The laboratory work increased to such an extent that Mrs. Richardson’s offer in 1927 to pay the salary of a clinical pathologist for 5 years was gratefully accepted.

The Clinical Laboratories of the KGH were housed on the second floor of the Richardson Laboratory restricting any expansion or development of clinical research. In 1950, Dr. J. Hamilton, the then Chairman of the Department of Pathology appointed Dr. G.F. (Bud) Kipkie (Queen’s 1939) who came from Duke University at Durham, N.C., as Director of Clinical Laboratories at KGH (and Associate Professor of Pathology at Queen’s). Dr. Kipkie remained in this post through and beyond the Chairmanships of Dr. Hamilton and his successor, Dr. Robert H. More. In July 1953 the Clinical Laboratories were moved to the basement of the Angada Children’s Hospital. This new and enlarged space enabled the training of its personnel more effectively in Surgical and Clinical Pathology. In 1957 Dr. Howard Steele (Queen’s 1944) joined Dr. Kipkie as an Associate Director of Clinical Laboratories, and Head of the Blood Bank. In 1953 Dr. D. Laurence Wilson (Queen’s 1944), with postgraduate training in Endocrinology at Toronto and Harvard Universities (and later Dean of Medicine), was appointed at KGH as a part-time supervisor of the Biochemical Laboratories and later Dr. Norman Hinton of Queen’s Bacteriology Department as a part-time supervisor of the Bacteriology.

Increasingly, the fields once “handled” by General Pathologists came under the supervision of specialists with additional training, such as Haematology (Dr. W. Corbett), Cytology (Dr. H. Steele), Paediatric Pathology (Dr. M.D. Haust), Neuropathology (Dr. D. M. Robertson) and others. The appointment of Dr. Sergio Bencosme (McGill 1950) in 1953 augmented considerably the expertise in several areas, making the KGH Laboratories and their work a leading centre at national and international levels.

Little is known of the Laboratory Services at the HDH prior to the WWI, and whether it ever contracted the services of Dr. W.T. Connell's laboratory. The history begins after the WWI when Dr. F.X. O'Connor (Queen's 1914). He served in the mobile "Queen's Hospital" overseas during the war and was listed as bacteriologist at HDH (and Dr. William Gibson as a pathologist). From 1920 to 1926, Dr. Thomas Little of the KGH staff was part-time Laboratory Director. He left in 1926 for the newly opened Ottawa Civic Hospital, as its Director of Pathology; he was succeeded in 1938 by Dr. Max Klotz.

There is a gap in the history of Laboratory services in the HDH from 1926 to 1934. In 1934 an internist with training in Pathology, Dr. John Tweddell (Queen's 1931) was appointed as the next Director. As well as performing autopsies and surgicals, he supervised the Laboratory (and ran an increasingly large clinical practice). The Department was approved for one year of training in Pathology by the Royal College of Physicians and Surgeons. A new wing of the hospital during this period provided much needed space. In 1942 he became the Chief Physician at the newly opened Nylon Plant in Kingston. He was an active teacher in pathology, medicine and jurisprudence. Wishing to devote his entire time to the practice of clinical medicine, he resigned in 1952 from the directorship of the HDH-laboratories, and was succeeded by Dr. Frederick Howatt (Queen's 1943). Having acquired an MSc in Bacteriology (1947) and following four years of training in pathology at Queen's, he was appointed Director of Laboratories at HDH in 1952. His accreditation described a full range of services, except serologic tests for syphilis, TB-cultures and mycology which were sent to the Department of Health Laboratories. Dr. Howatt left in 1957 to head Pathology at the House of Good Samaritan Hospital in Watertown New York. The next Director of Laboratories, Dr. Douglas Waugh (McGill 1942) (later the Dean of Medicine at Queen's), was not appointed until 1958. He came from McGill with considerable academic credentials and in the years of his tenure from 1958 to 1964 the laboratories at HDH flourished. Moreover, he introduced a variety of research to the departmental activities. He acquired an Assistant Director, Dr. Richardo Ceballos and appointed consultants for special areas of clinical pathology. In the 1960's Dr. Arlene Crowe (Clinical Chemist) and Dr. Ellen Van der Hoeven (Microbiologist) were added to the staff. Replacing Dr. Ceballos in 1963 Dr. William Corbett (Queen's 1956) assumed the Acting Directorship after Dr. Waugh accepted the Chairmanship of the Department of Pathology at Dalhousie in July 1964. He left HDH in September 1965 to become the Director of Haematology at KGH. The Head of Queen's Department of Pathology, Dr. Robert H. More (vide infra) assumed the Acting Directorship of Laboratories at HDH from 1965 to 1966 when he appointed Dr. Waugh's successor, Dr. Francis McElligott (National University of Ireland graduate) in October of 1966. With his arrival began a "golden era" of the Clinical Laboratories and Pathology in HDH for the next 25 years.

## 5. THE DISCIPLINE OF PATHOLOGY

### A. THE EARLY DAYS

As far back as the Township's beginning, post mortems were carried out by physicians, usually surgeons on many and navy and army personnel, and later also on city's inhabitants. The first concrete information of the introduction of pathology to the teaching at Queen's dates back to the 1861/62 session when Dr. J. Palmer Litchfield (who himself graduated only in 1863) was appointed to the newly established Chair of the Institutes of Medicine. The "Principals" of the course included Physiology, Pathology (Morbid Anatomy), Histology and Therapeutics. These were supplemented by vivisections, demonstrations with microscope and samples of specimens from the anatomy museum. Shortly after its establishment, the course was chaired by Octavious Yates (Queen's 1856), the first Queen's medical graduate to be appointed to a professorship of the Faculty. In 1875, Dr. A.S. Oliver was elected to chair the Institutes of Medicine and, several years later, Dr. K.N. Fenwick, a young energetic surgeon, was appointed as Professor of Physiology and Chairman of the Institutes. Already at that time there was a gradual change in the scientific methodology of medicine, from the casual association between a patient's symptomatology and post mortem findings to controlled observation.

Thus the spectrum of topics taught by Dr. K.N. Fenwick in physiology during 1880's resembled increasingly a modern course with inclusion of recent European research and teaching. His lectures 'covered' histology and some pathology. In his teaching of jurisprudence and sanitary science, Dr. C. Irwin included: post mortem appearances, signs of death, drowning, hanging, suffocation and, microscopic chemical and microspectroscopic tests for blood stains. The Royal acquired (among others) in 1881 a new microscope with pathological and physiological slides, and a set for testing urine. Whereas the information on the Royal's curriculum is somewhat incomplete, from available data it appears that pathology lectures amounted to two hours per week. In 1891 Bacteriology was added (two hours per week) to a medical curriculum (which already included Pathology). The first antiseptic surgery in Kingston, in 1882 or 1883, was performed by Dr. Michael Sullivan.

The two last lines of a student's poem written for Queen's College Journal in 1889 ("The Royal and her Faculty") contains an amusing anecdote referring to pathology:

“ The cocci are off on an ‘aureoid’ spree  
While we struggle and labor in PATHOLOGY “

The last meeting of the Royal's Board of Medical Studies on December 23, 1891, saw its recommendations generally accepted by the Medical Council of Ontario and bacteriology and pathology amongst other 'new' subjects became required courses throughout the Province. Although this program was not fully executed in the past at the Royal, it was implemented at Queen's when the Medical Faculty was re-established the following year (1892). With the re-establishment of the Medical Faculty at Queen's (official ceremonies took place on October 14, 1892 at the Convocation Hall of the Theology College), the instruction of the required courses of Pathology was undertaken on a part-time basis at various times by teachers of several related disciplines (Dr. D.E. Mundell – Anatomy; Dr. W.G. Anglin – Jurisprudence; Dr. A.P. Knight – Zoology, Physiology, Histology). Inflammation, degenerations and wound healing were the subjects of lectures and the discussions on the pathology of diseases included, when available, pathological specimens. Already by 1892, Dr. M. Sullivan taught surgical pathology (delivering his lectures either at Queen's or HDH; vide supra).

In 1895 Dr. A.P. Knight suggested that the Faculty should introduce a postgraduate medical course, and in 1897 he outlined a program consisting, amongst others, of chemical physiological, i.e., biochemical and pathological laboratory work in addition to clinical training. It was upon repeated suggestions of Dr. Knight that finally, some five years later (1903), the Queen's Senate and the Faculty accepted the proposal for the creation of the BA/MD, CM. Thus it became necessary to acknowledge pathology, bacteriology, sanitary science and mental diseases as courses that could be taught legitimately, or at least recognized, for a degree in the Faculty of Arts and Science. The accepted principle of the postgraduate program was similar to that of the New York Polyclinic. This was one of the proprietary schools assessed disfavorably by Abraham Flexner several years later (1910) because it was not university affiliated. However, whereas Queen's was not considered by him to be at the highest level (assigned to McGill and Toronto), she represented in his opinion, along with Manitoba "a distinct effort toward higher ideas".

Already in 1893 Principal Grant, and subsequently also the teachers of Pathology and Bacteriology, recognized the need for full-time professors in these disciplines if the Medical Department (School) were to achieve a first class status. It became apparent for some time that the teaching of these subjects in the Medical School as "appendices" to courses in applied anatomy, physiology or surgery was inappropriate. It was increasingly difficult to teach these two new sciences while preparing the students as practicing clinicians. Only by appointing a professor who would devote his entire time to teaching Bacteriology and Pathology could the problem be solved permanently. The remuneration for the (envisaged) professorship would have to be derived from students' fees and supplemented by university sources. However, such income would not have been attractive to an established clinician.

It may have been one of the most lasting effects of a fortunate coincidence that the newly graduated (1894) at Queen's, Dr. Walter T. Connell (the only student receiving honours in all examinations of the Medical Council), set off for postgraduate work in the laboratories of St.

Bartholomew's Hospital in London under the supervision of Professor Kanthack, and to take special training in Pathology and Bacteriology. He was inspired to undertake the above studies by Osler's Textbook of Medicine (1892) which stressed the importance of correlating the clinical manifestations of diseases with the pathological findings.

B. 1895-1920; Dr. Walter T. Connell (Fig. 1)

During Dr. W.T. Connell's stay in Britain, Dean of Medicine, Dr. Fife Fowler, was advised by the senior medical Faculty serving on the Subcommittee on Physiology and Pathology, to offer him a post because: "... the Faculty desired a competent man to devote his whole time to Pathology and Bacteriology"; "... the Faculty would provide \$600 per annum in addition to fees from postgraduate students and fees from analyses for other practitioners". In accepting such an appointment, Dr. Connell was asked to take a course (of action) to make him fit for that post. Dr. Connell accepted the position and received from the Faculty an inventory of the existing laboratory equipment with a request to submit his own needs for conducting his future courses. He reported for duties in September 1895 as the first (or the second ?) full-time, salaried medical Professor (at the age of 23 years!) to Chair a new 'unit' of Pathology and Bacteriology.

Earlier in the year (1895), the Faculty Board decided on additional specifications of his salary as follows: from the Faculty \$600 for the first year; \$700 for the second year; and in the third year \$850, and: "all fees for examination of pathological specimens other than those made for the University, which shall be made by him free of charge". In May 1895, the agreement was ratified by the Board of Trustees with an added condition "that he is not to practice his profession for three years". On December 2, 1895, on motion of Dr. H.J. Saunders, the KGH Board of Trustees approved the appointment of Dr. Walter T. Connell as a Pathologist to the KGH.

Dr. Connell set up a laboratory carrying out the required analyses and tests for the University, and opened the first course in Pathology in the Old Medical Building (occupying most of what was known as "the old den"). In the third year of the then four-year medical course at Queen's, three lectures per week were given for a full term in Pathology with emphasis on General Pathology. Dr. Connell was also responsible for the classwork in Bacteriology, requiring three hours per week during the entire session. 'Laboratory boys' and volunteering students were the only assistants in the pathological laboratory or unit of Queen's University (as yet Pathology was not a distinct Department). The 1895 Laboratory at Queen's is believed to have been the fourth Clinical Laboratory in North America. In the USA, it operated at the University of Michigan since 1893; in Canada also as of 1893, "Clinical Pathology" was part of the Royal Victoria Hospital in Montreal and a "Clinical Laboratory" at the General Hospital in Toronto was operated by the University's Medical School.

Following the establishment of the Laboratory, Dr. Connell, with the Faculty's permission, began teaching (also in 1895) the students of the Dairy School (bacteriology, sanitation, hygiene) and those of the Veterinary School (pathology, bacteriology); he continued until the closure of both schools several years later. In appreciation of his pioneering work at Queen's and recognizing his gifts and potentials as a scientist, the medical Faculty provided the 23 year old Dr. Connell with the opportunity to deliver the inaugural address at the opening of the 1896/97 session, ie. only one year after his appointment in 1895. His address was appropriately entitled "Some Relations of Pathology to Modern Medicine".

By the end of the three years, the terms of Dr. Connell's Queen's appointment were revised. He now could offer a complete range of laboratory services to practicing physicians of Eastern Ontario. These provided a small but sufficient income in addition to his University salary. His advertisement in "Kingston Medical Quarterly" provides evidence of the admirable range of knowledge of this young man in announcing that: "he is prepared to make Microscopical, Chemical and Bacteriological Analyses, as may be required of Morbid Tissues, Tumours, Serous or Purulent Effusions, Curettings, Sputum, Urine, Blood, Stomach Contents, Throat Membrane or Secretions, Urethral or Vaginal Discharges, etc. ...., to apply Widal's method for diagnosis in Typhoid Fever, and

to perform autopsies". In 1899 Dr. Connell published a textbook and course guide, "A Laboratory Guide in Practical Bacteriology"; it was of great value to students and practicing physicians alike. From 1899 to 1913 the book went through three editions. For some 15 to 20 years he contributed to scientific medicine by publishing regularly in "Queen's Quarterly" or in the "Kingston (Queen's) Medical Quarterly" of which he later became the Editor.

The students at the Dairy and Veterinary Schools as well as the increasing number of medical and biology honours students aggravated the already pressing problem of space. Lecture rooms were available in the Arts Building, and physics and chemistry laboratories could be conducted in Carruther's Hall, but the teaching of the medical subjects (physiology, histology, embryology, pathology and bacteriology) required an increased space in the Medical Building. The Faculty's widened teaching responsibilities and the expanding activities of Dr. Connell in particular, ultimately culminated in an agreement, (also by the University), to the addition of a third story to the Medical Building in the summer of 1901. The ground floor housed physiological, histological and research laboratories (of Dr. Knight), a lecture room and a students' cloakroom. A floor above contained Dr. Connell's separate pathology and bacteriology laboratories, and a preparation room. There was also a lecture room, a library, a museum, a students' reading room and a professors' room. The top floor housed a dissecting laboratory, a room for demonstrators' activities, two lecture rooms and a private room for professors. By 1904 a sizeable museum had been collected but many specimens were later destroyed by a fire on that floor. Following the refurbishing of the (Old) Medical Building, the Government of Ontario appointed in May 1904 Dr. Connell as a special provincial health officer (assistant provincial bacteriologist) in Kingston at \$500 annual salary. In 1905 the Laboratory was recognized by the Province as a Public Health Laboratory. For the use of its laboratory for Dr. Connell's provincially generated tests, the Faculty charged him \$200 per annum (which he paid into the Faculty's laboratory fund).

It was some time after Dr. Connell's appointment in 1895 before the faculty witnessed any improvement in its teaching facilities, as in time the refurbished Old Medical Building, also became overcrowded. The assistance came this time from the Province which granted Queen's \$50,000 in May of 1906 to aid medical education. This financial help followed upon repeated representations to the then Premier Whitney. The University Board of Trustees confirmed that: "As the Ontario Government has passed a vote of \$50,000 for the Medical Faculty of Queen's College for the promotion of medical education it is proposed to expend this sum on a building suitable for laboratories and on their equipment". Dr. W.T. Connell announced this news in the 1906 Spring issue of the "Queen's Medical Quarterly" (of which he was the Editor by now) indicating that the grant would be used at once "for the erection of the new Laboratory Building to house the departments of Physiology, Pathology, Bacteriology and Public Health". Indeed, in January of 1908 the building was ready for occupancy. The three top floors of the "New Medical Building" were used for laboratories and teaching of Pathology, Bacteriology and Physiology. The building also housed a range of paraclinical disciplines and accommodated Histology, Pharmacology and Public Health. In addition there were professors' offices, private laboratories, storage room and a commodious lecture room. During these years, some of Dr. Connell's senior students helped out in the laboratories.

Over the years, Pathology gradually replaced Anatomy at Queen's as the discipline important to the understanding of medicine. Dr. W.T. Connell lectured to the medical students twice per week on general pathology during the third and fourth sessions and subsequently gave a series of lectures and demonstrations on special pathology. The teaching also included the microscopic examination of four to six sections of diseased tissues per class. Each student was required to spend three to four weeks in the Pathology laboratory assisting in the preparation of tissues, and the staining and mounting of microscopic slides for general use of the class. During the fourth year the students rotated in assisting at least at six post mortem examinations and reporting in writing on the autopsy findings. The autopsies were performed in the mortuaries of the KGH and Rockwood Hospital for mental illnesses.

In bacteriology, Dr. Connell held a series of lectures and demonstrations twice per week during the final session until Christmas. Each student was taught the making of cultures and how to perform bacteriological examination on excretions and secretions. All instructions were kept strictly relevant to the needs of practicing physicians. The practical and straightforward presentation in his book (*vide supra*) on practical bacteriology reflected Dr. W.T.'s excellence as a teacher. However, his commitment to Queen's, and particularly her medical Faculty, reached far beyond his obligations as Professor of Pathology and Bacteriology. From 1900 to 1908 he served as the Faculty librarian and from 1904 until 1907 as the Faculty secretary. Early in his term (appointed in 1903 or 1904) Queen's fifth Dean of Medicine, Dr. James Cameron Connell (unrelated to Dr. W.T. Connell) introduced the History of Medicine into the curriculum. Dr. W.T. Connell assisted in that course with Dr. Knight by lecturing on Louis Pasteur and William Harvey.

Dr. W.T. Connell also became the Faculty's expert on sanitary science with a more practical than theoretical slant. Initially he lectured only during the summer session, covering food, water, air, ventilation, sewage disposal, hospitals, the climate and soil, stressing their importance in public health. He also lectured on medical jurisprudence and toxicology but in 1904, Dr. A.R. B. Williamson, who was Dr. Connell's demonstrator in Pathology, took over these lectures. As of 1905, some of the lectures were given by 'legal men'. The medical jurisprudence course introduced the students to the legal implications of (future) conducts as physicians. It addressed the real versus apparent death, features of wounds, effects of suffocation, drowning, evidence of rape, criminal abortion, impotence, sterility, medical toxicology, life insurance examinations, detection of blood stains, concealment of pregnancy, and infanticide as well as medical malpractice and its consequences.

In 1907 after the Medical Council of the Ontario College of Physicians and Surgeons required the institution of a 5<sup>th</sup> year in the medical curriculum, the Faculty introduced the five-year course in medicine. The Medical Faculty was aware of the fact that the recent graduates were having trouble keeping up with the pace of medical discoveries, and established in 1908 a three week summer course in 'Clinical Microscopy and Diagnosis' given by Dr. W.T. Connell.

It was only in 1913 that the new (amended) constitution eliminated any lack of clarity regarding the status of the Medical Faculty at Queen's: "... the purpose of the present amendment to the constitution of the Medical Faculty is that the Medical Faculty shall become as integral a part of the University as any other Faculty". This included that the Medical Faculty was to share equitably in all University funds and grants. There is little doubt that Dr. W.T. Connell's contributions to the scientific and educational endeavours, and the novel activities (including research) to Queen's and her Medical Faculty played a role in the agreement of amending and accepting the new constitution.

The WWI interrupted the Queen's Medical Faculty's progress and disrupted the already established new fields, including Pathology and Bacteriology, as students and professors alike became participants in the war. On May 5<sup>th</sup>, 1915 Queen's No. 5 Stationary Hospital (later No. 7 Canadian General Hospital) left Kingston and the next day boarded the CPR-liner Metagama in Montreal docking in Plymouth harbor on May 15<sup>th</sup> from where it proceeded to Cairo on August 1<sup>st</sup>, 1915. Prior to leaving Kingston, Dr. W.T. Connell was authorized to give the No. 5 Stationary Hospital any equipment that could be spared by the "New Medical Building". He was the Officer in Charge of Block III in the rank of Lieut.-Col and Dr. F.X. O'Connor, promoted to Captain, was in charge of the Pathological Laboratories. The hospital opened in Cairo on August 27, 1915 and treated many Australians, New Zealanders and other Imperial troops from the Gallipoli defeat, but also other patients. Towards the end of that year, Dr. W.T. Connell was recalled to Queen's to continue teaching Pathology and Bacteriology (a function taken over temporarily in his absence by Dr. William Gibson), to speed-up the training and graduation of medical officers, and to assume the command of the Grant Hall Hospital also after it moved to St. Helen's (later known as the Sydenham Hospital). Back in Kingston, he integrated his new obligations with his ongoing responsibility for the 3<sup>rd</sup> Military District Laboratories and his professional duties of Queen's Pathology. He was greatly assisted in directing the Grant Hall Hospital by Captain F.X. O'Connor who returned from overseas and joined the teaching staff of the Medical Faculty (*vide*: HDH).

The teaching at Queen's, particularly that of clinical subjects suffered much in quality during the postwar years. Between the signing of the armistice (November, 1918) and the dissolution of the No. 7 Canadian General Hospital (May 1919) Queen's medical officers were primarily concerned with the repatriation of the sick and wounded. Having witnessed themselves the comprehensive teaching facilities in Britain and on the European continent during the war, the numerous Queen's military graduates questioned Kingston's suitability as a medical centre and Queen's viability as a five-year medical school. Apparently, the facilities for teaching undergraduate medical students at KGH were reported at that time as "deplorable". Thus, Dr. (Colonel) Frederick Etherington (later: Dean of Medicine) wrote a letter in January 1919 to the then Principal Bruce Taylor on behalf of many Faculty members and Queen's graduates who had "come definitely to the conclusion that it is not in the interest of the University to continue to attempt to conduct a full medical course in the City of Kingston". The suggestion was that the senior medical students be sent either to Ottawa or to McGill for their clinical studies. Dr. Etherington seemed to have been encouraged in these secessionist ideas by Dr. W.T. Connell who, too, felt that clinical teaching in Kingston had no future "in our generation". However, in the fall of the same year (1919), Dr. W.T. Connell with the support of other Faculty of Medicine members, changed his mind, requesting that "a Special Committee on the Future of Medical Education in the University" be established to review the matter. Two months later the recommendations of the Committee (established in October, 1919) saved the future of the Medical School at Queen's.

The outcome of the secessionist attempts had been a determined impetus to the University to reorganize the Medical Faculty and increase considerably the number of teachers. The challenge to the main teaching hospital (KGH) was to modernize, and enlarge its space and increase ancillary services for patient care.

Dr. W.T. Connell accepted the offer to "move" from the Professorship in Pathology and Bacteriology to the post of Professor of Medicine. No doubt there were two reasons for his agreement to that move. While serving as an Officer in charge of an entire Block (III) of the No. 5 Stationary Hospital in Cairo, he enjoyed clinical medicine and attending to patients. However, there is no doubt that in the time of Queen's Medical Faculty's crisis he acted as a devoted Queen's man. There was an urgent need to establish as quickly as possible a desirable status and reputation in this particularly precarious phase of his beloved Alma Mater, and he could serve her best agreeing to Chair the Department of Medicine, one of the most crucial clinical disciplines. By the end of 1919-session, Dr. W.T. Connell went to Britain on behalf of Queen's in search of suitable new Medical Faculty. He was successful in attracting Dr. Lorimer John Austin (a surgeon), Dr. G. Spencer Melvin (a physiologist who joined Dr. W.T. Connell in Medicine) and Dr. James Miller (pathologist), who were appointed to Queen's Medicine and the KGH-staff.

By February 1920, Queen's Board of Trustees Committee agreed to seven binding points to maintain the Medical School at the University. The No. 4 concerned the "Development of the Hospital Pathological Department with adequate investigation of each case on entrance to hospital together with a complete follow-through record, the present system of records to be completely overhauled and extended".

Since the inception as distinct subjects (courses), Pathology and Bacteriology were chaired as a unit by Dr. W.T. Connell. In 1920 they were divided into separate disciplines at Queen's, but at KGH the Bacteriology remained in the domain of Pathology.

Upon assuming the chairmanship of the Department of Medicine at Queen's and KGH, Dr. W.T. Connell continued serving with distinction and devotion his Alma Mater for over a half a century. But he also served his profession in many capacities, e.g., in 1931 he founded (with Dr. Austin and others) the Royal College of Physicians and Surgeons of Canada. After his official retirement in 1943 he continued to serve as a Medical Consultant on the Attending-KGH-staff and a Professor at Queen's until 1950. Upon his death in April 1964 the W.T. Connell Memorial Lecture was established and first given in 1965.

### C. 1920-1946; DR. JAMES MILLER (Fig.2)

Dr. Miller, who succeeded Dr. W.T. Connell as the Professor of Pathology was, at the time of his appointment to Queen's, a Lecturer of Morbid Anatomy at the University of Edinburgh, and a Lecturer of Pathology and Bacteriology, School of Medicine of the Royal College, Edinburgh and Edinburgh School of Medicine for Women. He was also an Examiner in Pathology at the University of Aberdeen, Royal College of Physicians in Edinburgh, and of Birmingham University. Dr. Miller was known as an excellent teacher and educator, and his textbook, "Practical Pathology; Morbid Anatomy and Post-Mortem Technique", first published in 1914 in Edinburgh, being in great demand, was re-edited there in 1925.

While at Queen's University he was also the Chairman of the Department of Pathology at KGH, a Consultant in Pathology to the Department of Health of Ontario, and the Examiner in Pathology of the Dominion Council and Royal College of Physicians and Surgeons of Canada. In Canada Dr. Miller soon acquired a reputation as an excellent teacher and practicing pathologist. He continued writing extensively on morbid pathology (the third edition of his textbook appeared in 1938 both in Britain and North America), on the training of young pathologists and on the subject of historical interests. His fellow pathologists regarded him highly and elected him President of the Ontario Association of Pathologists for the year 1940-1941.

As the Head of Service of Pathology at KGH, he was assisted by Drs. Thomas Little, A.H. Lothrop (Physiological Chemistry), and G.B. Reed (Bacteriology). He was greatly appreciative of his Associate, Dr. W.D. Hay, whose help and co-operation he acknowledged in the third edition of his textbook. Dr. William Hay (Queen's – Arts '14 and '16; Med '21) held originally an appointment in Pathology and Bacteriology. He relinquished the Bacteriology appointment in 1923 devoting his full time to Pathology. No graduate since that time can forget Dr. Hay's lectures and his special interests as one of the Crown pathologists. He retired in 1957 after a long service as an Associate in the Department of Pathology.

During the tenure of Dr. Miller, there were several important innovations in the Department. Whereas initially, Dr. Miller continued to work and teach in the New Medical Building, he soon could establish a permanent home for the Department of Pathology. In November 1922 Mrs. Alice Richardson, a widow of Senator Harry W. Richardson and sister-in-law of Dr. W.T. Connell, offered \$100,000 to provide for a building for modern laboratories which would include suitable accommodations for tuberculosis patients (the Mowat Hospital built for these, had been in use as a veteran's hospital). This gift and the available \$100,000 Douglas Fund made possible an early start on the buildings of the Richardson Laboratory and the Douglas Wing of the KGH.

The single most spectacular improvement for patients, doctors, and management was celebrated on 16 October 1925, when Dean J.C. Connell officially opened the Richardson Laboratory (RL) (Fig. 5) and the Douglas Wing (DW). The latter building had public wards on two floors, rooms for tuberculosis patients, and four operating rooms on the upper most floor. On the 1<sup>st</sup> floor there was space for outpatients; X-ray; hydro and light therapy; eye, ear, nose and throat department; electrocardiograph; dispensary; and an office for the Medical Officer of Queen's University.

THE PATHOLOGICAL UNIT became for the first time officially "THE PATHOLOGY DEPARTMENT" of the Queen's University and the KGH; its permanent home became the Richardson Laboratory. The first floor of the RL housed a large museum of pathological specimens, containing shelf after shelf of bottled abnormal organs with coded cards detailing the pertinent history and pathology. These were used by students, trainees and examiners in Pathology and Surgery. Whereas this was a useful teaching collection, it did occupy a considerable, mostly unused space. Also on the first floor were offices of the Chairman and his Associate (Dr. Hay), and an autopsy room with a theatre seating resembling an operating room; it was also used as a lecture room. The second (top) floor housed a large student laboratory, some small offices and small laboratories for clinical chemistry, hematology, Public Health Laboratory, histology and biochemistry (N.B.: It is assumed that the bacteriology was "accommodated" in the Douglas Wing). The basement housed a large amphitheatre (seating 100 persons) for Pathology and other lectures; it had a special lantern for

projection of microscopic slides. A few rooms served for storage, and an area with current daily newspapers (but no furnishing for comfort) was named by the students: "the dungeon".

In the effort to correlate the work of the operating rooms and the laboratories, an arrangement was made with Dr. Miller who agreed to examine immediately all tissues from operations and to report his findings. This had been done before largely on request and for the paying patients. The laboratory work increased to such an extent that Mrs. Richardson's offer of 1927 to pay the salary of a clinical pathologist for 5 years, was gratefully accepted. Following a negotiated agreement with KGH in 1935 by the Head of Medical Radiology, concerning the division of earnings from the original Queen's: KGH 90:10 split to a 50:50 basis, a similar arrangement was made by Dr. Miller for the services in Pathology. During this period the Department of Pathology also acted as a Public Health Laboratory and this phase of the work of the Department continued as such until 1946 when all the provincial work was taken on by the Barrie Street Laboratory. Through the further generosity of Mrs. Alice F. Richardson, a Fellowship in Clinical Pathology was established in 1926. It was to provide for a senior intern the opportunity to correlate Clinical Medicine with the findings of the Clinical Laboratory. On Mrs. Richardson's death in 1929, a generous bequest permitted the setting up of a trust fund, one function of which has been to support the above Fellowship.

Whereas Dr. Miller had reached his retirement age earlier, he stayed on in his post during the Second World War largely because of his loyalty to the Department and Queen's. In view of the great shortage of available teachers at the time of the war it would have not been an easy task to find his successor. Upon his official retirement he returned to Britain in the summer of 1946 where he enjoyed a well-deserved rest. Sadly, the contact between Queen's University and Dr. Miller was lost after the fifties.

#### D. 1946-1951; DR. JOHN D. HAMILTON (FIG. 3)

Dr. John D. Hamilton, a native of British Columbia obtained his Medical Degree from the University of Toronto in 1935 and trained in Pathology in Toronto under the supervision of Dr. Oskar Klotz. He continued his postgraduate education in Cambridge, UK and at Johns Hopkins University with Dr. Arnold Rich. He served during the WWII for six years in the Canadian Army rendering valuable service in the field of laboratory organization and research in Pathology. Dr. Hamilton's academic career began in 1945 at McGill University where he spent a year as an Assistant Professor. He was certified in 1946 by the Royal College of Physicians and Surgeons of Canada and later was an Examiner in Pathology. He came to Queen's in 1946 as Professor and Head of the Department of Pathology, after the retirement of Dr. Miller.

Dr. Hamilton introduced changes in the RL and many new initiatives in the modernization of the discipline in format and content. The museum was relocated to the basement and the freed space on the first floor of the RL was converted to rooms for staff, research fellows and a conference/library room. The usage of the museum declined and this was an initial first phase in the development of modern/research department. Because of the nature of the developing research, the facilities for it were located in another building ("animal house" at KGH). Dr. Hamilton's outstanding ability as a teacher and his personality made him popular with the students and he was respected by staff. His Saturday morning clinico-pathological conferences were held before capacity audiences. In 1950 he appointed Dr. G.F. Kipkie (Queen's '39) as Director of KGH-Hospital Clinical Laboratories (and Associate Professor of Pathology at Queen's), in recognition of the need to oversee the quickly growing knowledge and work in these fields.

Dr. Hamilton's influence and activities extended also beyond Queen's. Together with Dr. Louis Berger of l'Universite Laval, Dr. Hamilton conceived the idea of a national association of Canadian pathologists. Following the death of Dr. Berger in 1948, Dr. Hamilton, with the help of the Ontario Association of Pathologists (founded in 1937), arranged an organizational meeting of Canadian professors of Pathology in Saskatoon on June 15, 1949. At this inaugural meeting, Dr. William Magner of St. Michael's Hospital in Toronto was named President and Dr. Hamilton was appointed Secretary/Treasurer. As outlined by Dr. Hamilton, the main objectives of the Association were: "to promote the interests of pathologists and allied scientists, to maintain a high standard of proficiency among pathologists, and to advance and improve the specialty of Pathology and its allied sciences". By the following year, the number of the members of the Association amounted to almost 90 pathologists (paying the \$10 annual dues!)

In 1951 Dr. Hamilton was offered and accepted the position of Head of the Pathology Department at the University of Toronto where he subsequently became Dean of Medicine (1961), Vice-President of Health Sciences (1966) and Vice-Provost (1972). During this time he was associated with many Toronto hospitals as consultant, as well as holding posts with the Ontario Department of Health, Connaught Laboratories, National Research Council and the Ontario Heart Foundation. He was especially pleased to be awarded an Honorary Degree from the University of Nigeria for his work there.

Upon his ultimate retirement from the University of Toronto in 1976, Dr. Hamilton moved back to British Columbia and to the mountains "he loved so well". He died peacefully at the age of 91 years in Vancouver on November 5, 2002.

#### E. 1951-1966; DR. ROBERT H. MORE (FIG. 4)

Following Dr. Hamilton's move to Toronto, Dr. Robert H. More was appointed at the age of 39 years as the fourth Head of the Department of Pathology. Native of Ontario, Dr. More graduated in Medicine from the University of Toronto (1939) and, following a year of internship at Toronto General Hospital, he studied at McGill University with Dr. Lyman Duff, Professor of Pathology, receiving his MSc (Path) in 1942. Following further studies at Toronto and McGill Universities, he was certified in Pathology by the Royal College of Physicians and Surgeons of Canada in 1946. Subsequently, he spent two years in the USA at Cornell University and the New York Hospital, returning to McGill

University in 1950 as full Professor of Pathology. Throughout his postgraduate years, he was intensely involved in research with emphasis on immunological, renal, cardiovascular and connective tissue disorders.

Appointed Professor and Head of the Department of Pathology at Queen's, he also was Pathologist-in-Chief at KGH and Consultant to all teaching hospitals in Kingston. Dr. More's years at Queen's (1951-1966) hold a particular significance not only for the Department, but also to the discipline of Pathology in Canada and at an international level. Under his aegis the 'metamorphosis' soon began from a small, almost provincial and little known Department to a nationally and internationally recognized and respected centre renowned for its academic and scientific activities. During his tenure of 15 years, the number of full-time academic pathologists increased from two to eleven. The following are some of the developments introduced or fostered by Dr. More:

1. The departmental space for service, teaching and research was enlarged in a design that would allow the interaction and exchange between them. Thus, following the addition of two floors on the top of the DW of the main teaching hospital (KGH) and another two floors on the top of the University's departmental building RL (compare Fig. 5 with Fig. 6), and redesigning of both original parts, the merged diagnostic-research-teaching centre operated as one functional unit; it opened in October, 1962. The top (5<sup>th</sup>) floor of the RL now housed faculty and secretarial offices, several small special laboratories and a large attractive library which served also as a conference and a social gathering room. It was considered to be the departmental centre and its 'heart'. The 4<sup>th</sup> and 3<sup>rd</sup> floors of the reconstructed RL were occupied by electron microscopes, tissue processing rooms and research laboratories. A completely new and modern autopsy suite was built in the basement. It consisted of two rooms accommodating three tables for post mortem examinations, with space and seating for autopsy conferences. Seminar rooms for student teaching and research laboratories were also added throughout the building. It was significant that the building of the RL-DW-complex was achieved by cooperation of the University and the KGH in recognition that (in Dr. More's words): "Medical laboratories have become not only increasingly the centers of medical research, but were responsible for accurate diagnosis and treatment of diseases. These functions, while independent, can complement one another if properly co-coordinated under planned conditions." An innovative feature of the restructuring and expansion of the Department of that phase was moving all of the Clinical Pathology (as well as Surgical Pathology) to the Douglas Wing. Similarly, the residents, fellows and graduate students were accommodated also in that KGH-wing.

Actually, the expansion of the Department into the DW began prior to 1962. This Wing was built for patient care and services at the same time as the RL, and whereas both were connected at all floor levels, the latter was a University building. Despite that RL provided also pathology services for KGH. When space became insufficient, the RL-expansion began into the adjacent DW. The first laboratory moving into DW was the Blood Bank which was located on Douglas 1. By 1958 it became too small and as there was no room for expansion, it was moved to the only available space nearby behind the Watkins Wing, off the passage between Nickle Wing and the Douglas-Empire corridor of the KGH. There were no other 'invasions' into DW until the major expansion of the Department in 1962, when most of the new Douglas 4 and Douglas 5 were converted to laboratory use. The latter contained a specimen reception and communication centre, haematology and cytology labs, blood bank, the tissue processing areas, and space for residents (*vide supra*), some pathologists and secretarial service. Douglas 4 also housed Staff, and Microbiology and Biochemistry laboratories, and the clean-up and sterilization areas.

2. Dr. More introduced into the new facilities modern techniques and newly available tools (histochemistry, electron microscopy, fluorescent antibody techniques, cryostat) to both the investigative and service work at a time, when most of the academic departments of Pathology in Canada were not so advanced.

3. He facilitated the broadening of departmental research, while remaining an active and productive investigator himself. Whereas at McGill prior to the Kingston-era, he pursued several areas of research in addition to atherosclerosis, he concentrated his efforts almost entirely upon the

latter since coming to Queen's. The prominent area of investigations by other faculty members included: endocrinology, connective tissues, inborn errors of metabolism, paediatric pathology, neuropathology, and cardiovascular, renal, mammary and gynaecological pathology. He expected the Faculty to present the results locally, and at national and international meetings, and thereby established one of the successful links between the Queen's department and the professional international community.

4. He introduced graduate education (MSc; PhD) for young pathologists that attracted also a number of foreign students who, upon graduation, were committed to return to their home universities as academic pathologists. In fact, Dr. More, fully devoted to academic pathology, would accept for the graduate studies only pathologists. The first PhD student of the department worked under his supervision (Dr. Henry Movat). During his tenure 13 MD's and fully qualified pathologists obtained a graduate degree from Queen's.

5. He established the first 4-year-residency in General Pathology program to provide a firm basis for training of young, largely academic pathologists. The program was approved by the RCPSC, and remained very active, long beyond Dr. More's term at Queen's.

6. Embracing early the concept of subspecialization, Dr. More fostered the collaboration with clinical departments in service, research and education, and arranged for selected residents (completing the 4-year program) and for young faculty the training in subspecialties in well-known centres outside of Canada. On returning to Queen's they established "units" of subspecialties (Dr. M. Daria Haust: paediatric pathology, 1960; Dr. David M. Robertson: neuropathology, 1962; Dr. William Corbett: haematopathology, 1963; Dr. Howard Steele: obstetrical-gynaecological pathology, 1964, and other). Arranging for subspecialty training away from Canada was another means whereby Dr. More established links between Queen's and centres of excellence in the international community.

7. Another achievement of Dr. More was the formalization of the relationships of the (non-pathologists) Directors of the existing clinical laboratories (biochemistry; microbiology) with the department of Pathology, and coordinating their educational and service components with those of Anatomical Pathology. All the departmental "divisions" acted as a functional unit -- quite an unusual feature at many Canadian Universities of the time.

8. He succeeded also in 'converting' the Department of Pathology at the large HDH from an almost purely community service laboratory to a fully academic department by appointing prominent academicians to chair it as Directors. He supported their efforts by promoting their research and participation in teaching, and by arranging for the Queen's Pathology residents to rotate through the department at the HDH (for details see the section on HDH).

In this period Medicine was a six-year-course and Pathology was taught in the third year. The teaching included a large number of lectures, gross-specimen-demonstrations and laboratory (microscopic slides) -sessions. These teaching obligations were a considerable burden for the few pathologists of the day. With the increasing number of full-time faculty (since Dr. More's appointment), the teaching became streamlined, organized and vigorous. It also assumed a somewhat 'sophisticated' or philosophical note that seemed to appeal to the students, stimulating many to work in the Department in the summers on various services or in research. This activity proved beneficial to the Department as some summer-students specialized later in Pathology and a number, while electing other specialties in medicine, returned to the Department for a year of a fellowship. In mid-sixties the teaching was reorganized with emphasis on small-group-instructions (seminar teaching). This was possible by the availability of a considerably increased faculty, and the reconstruction and addition of space that provided a number of suitable small rooms for that purpose (vide infra). In addition to teaching the Pathology course, almost all faculty members were involved heavily in the undergraduate teaching of clinical departments related to the members' subspecialties. This teaching provided a most fruitful and stimulating time for the faculty as the contact with the students spanned over several years and until their graduation. The students, too, appreciated these years of association acknowledging the faculty's efforts by awarding to some the distinction for excellence in teaching. One member received the best teaching award every year between 1960 and

1967 (in those days such awards did not carry any visual documentation or monetary means. It was a simple announcement at the Faculty of Medicine meetings and/or in Aesculapian Society News).

Of the many contributions to the diverse flourishing research during Dr. More's tenure at Queen's there were at least two areas that have had lasting impact upon and revision of the mechanisms and nature of some diseases. In addition to his previously established pioneering work on the identification of X-cells in the pancreas [forerunners of the polypeptide (PP)-producing cells identified years later] and the mechanisms of insulin- release by the beta cells, Dr. Sergio Bencosme (McGill 1950) (a senior faculty member in the Queen's Department) (with coworkers) identified specific granules in the cardiac atrium. (Martinez-Palomo A, Bencosme S; Fed Proc 25:476, 1966 and Proc Can Fed Biol Soc 9:29-30,1966). He believed that they contain a humeral factor regulating blood volume and pressure. This work culminated in the eventual discovery and characterization of atrial natriuretic factor (cardionatin) some years later (de Bold, A; PhD thesis, Queen's 1973).

Dr. More himself played a role in the second area of note, i.e., the discovery with Dr. M. Daria Haust (Haust MD, More RH; Feb Proc 17: 440, 1958; Haust MD et al; Am J Pathol 37(4):377-389, 1960) that arterial smooth muscle cells rather than fibroblasts (as believed until that time) were the cells involved in all phases of atherosclerotic lesions (migration; proliferation; elastase-secretion; connective tissue production; fat-accumulation). This work, began in the fifties, revolutionized the concept of atherogenesis, the mechanisms of myocardial infarction, and the approach to prevention and therapy by manipulating the behaviour of these cells.

In retrospect it is apparent that Queen's department was molded in the 15 years of Dr. More's tenure to "fit" his vision of what conceptually may be considered to represent an Institute of Pathology (More RH; Can Med Assoc J; 88:438-442, 1963).

At the end of 1966 Dr. More accepted the invitation to become the Strathcona Professor of Pathology and Chairman of the department at McGill University; Pathologist-in-Chief at the Royal Victoria Hospital; and a Consultant in Pathology to all McGill's teaching hospitals. While there, he continued his own research and supervised the investigation of a number of gifted young pathologists. Several of his students at Queen's and McGill achieved later on their own leading positions as teachers and scientists. He was a superb mentor to legions of academic pathologists and an inspiring force in the discipline of Pathology.

During his tenure at Queen's (as also throughout his later years), Dr. More was entrusted with a number of key posts in scientific and professional societies and health related agencies. He was the President of the Ontario Association of Pathologists (OAP) (1958-1959), International Academy of Pathology (IAP) (1967-1968) and Honorary President of the Canadian Atherosclerosis Society (1983-1994); Chairman of the Education Committee of the IAP (1963 -1966), Research Advisory Committee of the Canadian Heart Foundation (1963-1965) and Scientific Committee of the Canadian Arthritis and Rheumatism Society (CARS) (1969-1970). He served on the Editorial Board of the prestigious American Journal of Pathology and as a Member of Council on Research and Professional Education of the CARS (1954 -1970). It is of special note that he was a member (and the only Canadian) of the exclusive "PLUTO CLUB" of North America (by invitation only) consisting of "young outstanding academic Pathologists" of the time. Amongst his "club" contemporaries were such giants as Tamayo Pérez (Mexico) and Benjamin Landing (USA).

Dr. More was an invited speaker (or otherwise engaged in scientific programs) in Canada and around the world on countless occasions, -- always acknowledging the contributions of his collaborators in his reports on the ongoing research. Of his 140 publications approximately half date to his time at Queen's; the other pertain to the investigations at McGill.

Dr. More was also the recipient of a number of honours and awards; some were of a special significance. In recognition of his scholastic achievements and pioneering of academic Pathology in Canada Dr. More was elected in 1961 a Fellow of the RCPSC. In appreciation of his many contributions, the US/Can. Division of the IAP presented Robert More with the F.K. Mostofi Distinguished Service Award (1985). The Department of Pathology at the McGill University honored the former Chairman by establishing the "Robert More Fellowship for Graduate Students in

Pathology" (1993). In 1999 the new modern library of the restructured and extensively renovated Department of Pathology at Queen's was dedicated to Dr. More on a festive occasion and with his participation.

Upon receiving his Emeritus Professor status at McGill University in 1986, Dr. More returned to Kingston and to his many friends at Queen's. He passed away on August 5, 2003 in his ninety-first year of life.

## 6. POSTSCRIPT

It will be apparent even to the casual reader of this account that the information provided concentrates largely on two periods of the Queen's Department of Pathology, i.e., that of the Chairmanships of Dr. W.T. Connell and of Dr. Robert H. More. This does not reflect the authors' bias, but rather reflects that in the life of the Department these two time frames have been crucial.

The first (1895-1920) tells the story of great difficulties encountered in the establishment of a fledgling new discipline (Pathology) in North America at that time, especially in a small town and against the problem of facing the obstacles in creating a lasting Faculty of Medicine at Queen's.

The second (1951-1966) reflects the ultimate establishment not only of the discipline of Pathology but of its 'golden age' as a national and international centre owing largely to the wisdom and vision of its leader. His efforts were no doubt the then prevailing beneficial attitudes and generousities of the governments, and administrative authorities at Queen's University and at teaching hospitals.

The shorter accounts of the two remaining periods of chairmanships (1920-1946; 1946-1951) have also a more practical reason: in preparing the history, it was not possible to locate sources that would provide detailed information on the activities of the above two periods. This deficiency in details should not imply in any way that the contributions of the two Chairmen of these periods were not of considerable importance.

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