

Tuberculosis in Canada: Some Historical Perspectives



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TB Conference 2018: Looking Forward

Breathe: The Lung Association

Toronto, November 21, 2018 @ 3:05 – 3:50 pm

“Tuberculosis is more than biology; it is a statement about society”
(*People’s Plague*, PBS, 1995)

Tuberculosis in Canada: Some Historical Perspectives

Learning Objectives:

- Provide historical context to the distinctive tuberculosis experience in Canada
- Trace development of sanatoria, provincial & federal TB treatment programs, the Canadian experience with BCG vaccine, and TB's impact on Indigenous population
- Special focus on the work of Dr. Peter Bryce in exposing the toll of TB in residential schools in the 1900s-1920s period, how that work was received and then essentially ignored by Canadian governments
- How the federal government set up separate Indian Hospitals after World War II and how TB spread into the North, prompting the forced removal of Inuit TB patients to sanatoria in Hamilton & Edmonton
- Highlight the rediscovery and resurrection of Peter Bryce in the context of the Truth and Reconciliation Commission's Report on Residential Schools.



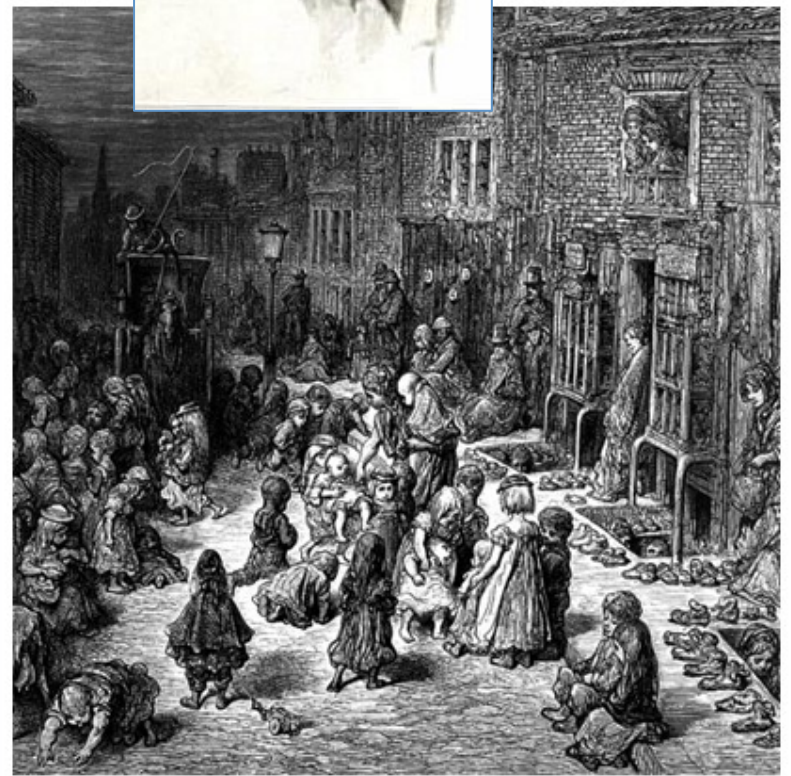
“Tuberculosis is a social disease with a medical aspect.”
(*Dr. William Osler (1849-1919), Canadian physician*)

Tuberculosis Introductions

- Tuberculosis is an ancient disease, known by several names over time – “consumption”, “phthisis”, “scrofula,” “the white plague” – and has affected humans for at least 6,000 years
- There is evidence of the disease in Egyptian mummies, in Old Testament Biblical passages, in Indian and Chinese texts dating from 3300 and 2300 years ago
- In Western Europe, TB reached its peak during the industrial revolution of the late 18th and early 19th centuries, with death rates as high as 900 per 100,000, fueled by the poorly ventilated housing, primitive sanitation and malnutrition of rapid urbanization
- By the end of the 1800s, 1 in 7 people in Europe died of tuberculosis

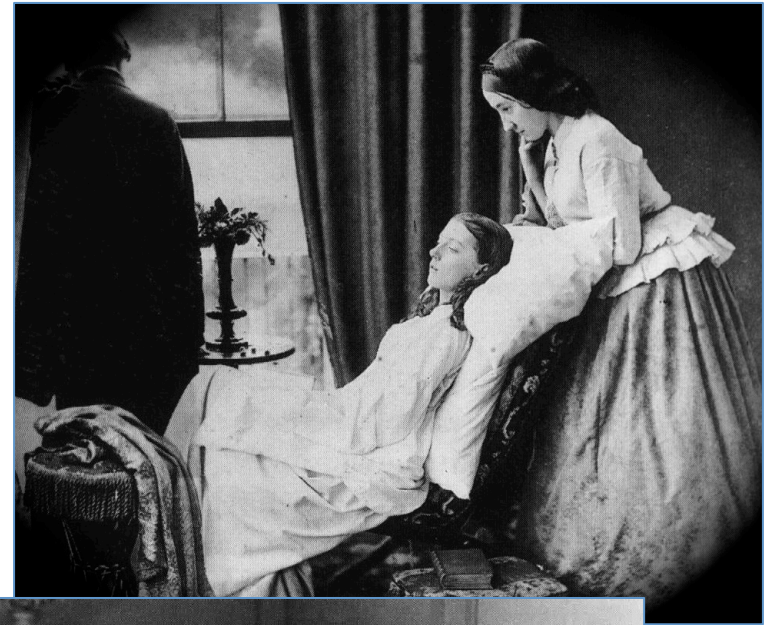


TB of the spine
(Pott's disease) in an
Egyptian mummy, c.
1000 BC)

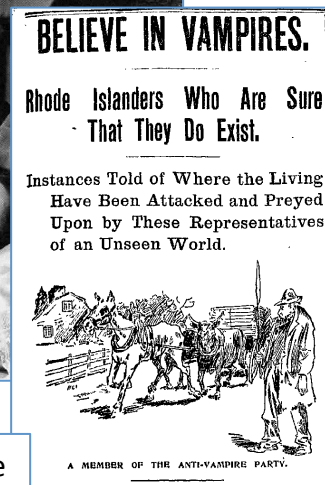


Tuberculosis Introductions

- Into the 19th century, death by TB was considered by many among the upper classes as a romantic, even fashionable, way to perish
- Drawn out death from “consumption” became an increasingly common feature in the literature and arts of the era
- Some women became so fascinated by the morbid romanticism of “the white plague” that they powdered their faces to attain the striking pallor of the fading TB victim
- In Eastern Europe, and 19th century New England, TB became associated with vampires, and felt by some to be caused by them
- With TB patients slowly “consumed” by the disease, it was thought that vampires – perhaps undead TB victims - were feeding on their blood



Boston Globe, unknown date

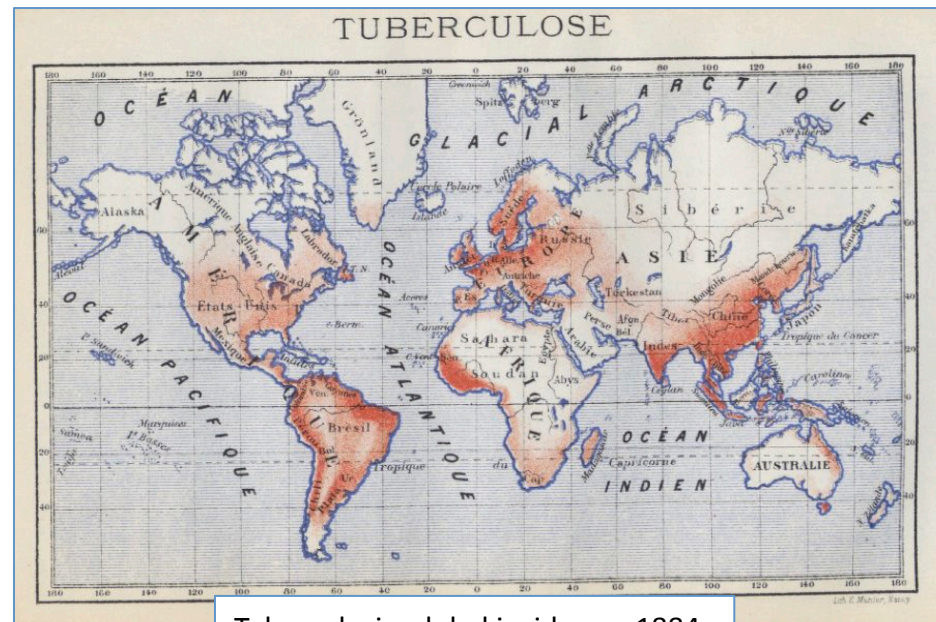


Tuberculosis Introductions

- While there is evidence of TB-like disease in the pre-Columbian Americas, there is little doubt the North American tuberculosis experience was derived from European colonization
- The epidemiological pattern in each country of origin was mirrored in Canada and TB incidence accelerated with increased urbanization
- Among the Indigenous population with no ancestral exposure, TB incidence followed contact with Europeans; through the eastern fur trade during the late 17th century, on the west coast during the late 18th century, on the Prairies during the mid-19th century, and in the North in the late 19th and early 20th centuries



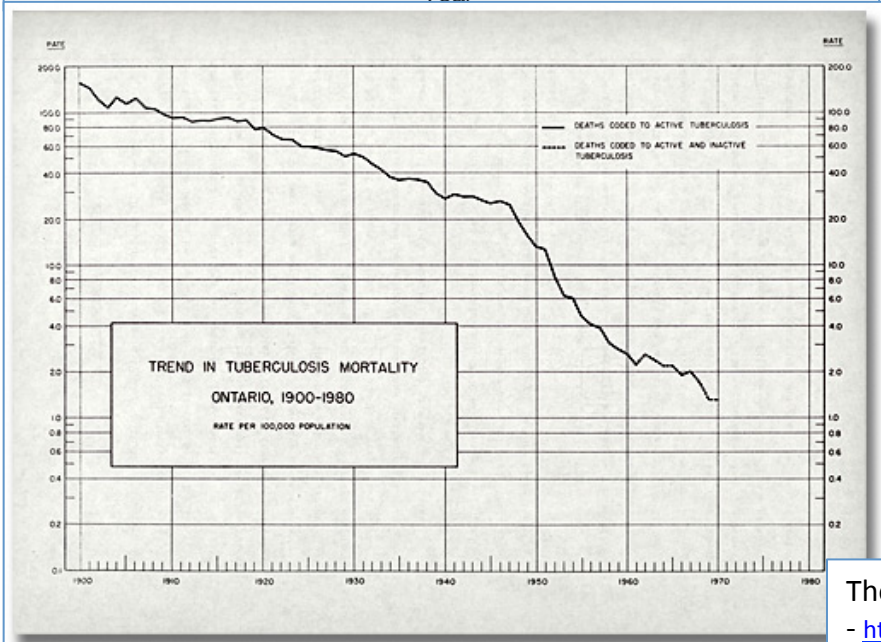
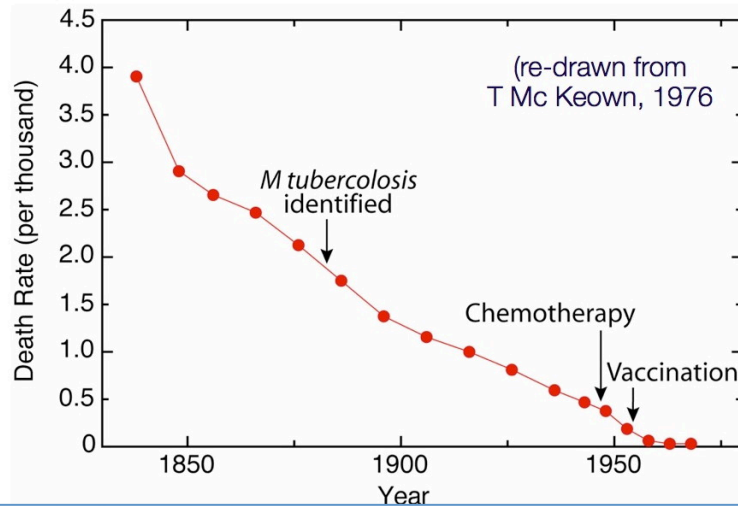
French fur traders brought strains of TB bacteria to North America, where it spread into indigenous populations



Tuberculosis, global incidence, 1884

Discovering TB's Biology

Mortality by tuberculosis in England and Wales



- Understanding, treating and preventing tuberculosis was a very long process
- Nevertheless, it is clear that TB is a classic example of the relationship between an infectious disease and the social determinants of health
- Thomas McKeown illustrated the decline of TB in the UK from 1838 to 1970 and attributed it primarily to improving social and economic conditions, rather than to clinical advances
- While medical interventions helped reduce TB rates, they were introduced only after rates were already in decline
- Improvements to nutrition, hygiene, housing and working conditions contributed most to the health progress

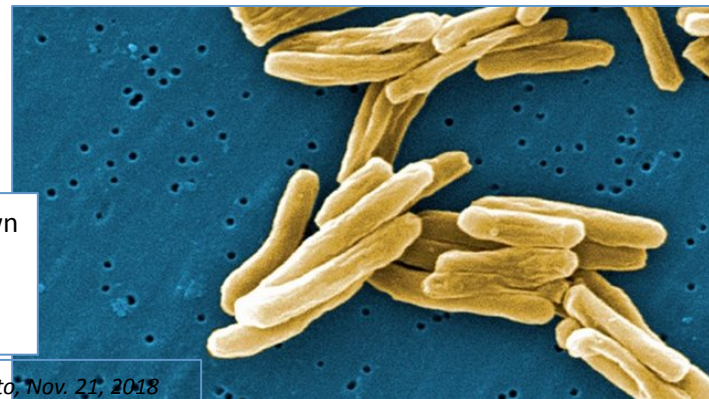
Thomas McKeown, *The Role of Medicine: Dream, Mirage or Nemesis* (1976)
- <http://www.nuffieldtrust.org.uk/publications/role-medicine-dream-mirage-or-nemesis>

Discovering TB's Biology



Robert Koch (1843-1910) and “Koch’s bacillus”, formally known as *Mycobacterium tuberculosis*, the discovery of which was announced on March 24, 1882, a date later acknowledged as “World TB Day”

- **1882** – The most important discovery was Robert Koch clearly demonstrating that the tubercule bacilli was the causative organism of tuberculosis
- Koch’s new biological staining method revealed the tubercule bacilli in sputum of TB patients
- *Mycobacterium tuberculosis*, or “Koch’s bacillus,” had a unique protein coat that had made it difficult to be seen without the use of the new stain
- **1890** – Koch developed tuberculin, originally a glycerine extract of the bacteria, first thought a potential immunizing agent, but in 1908 was shown to be effective for diagnostic testing



Discovering TB's Biology



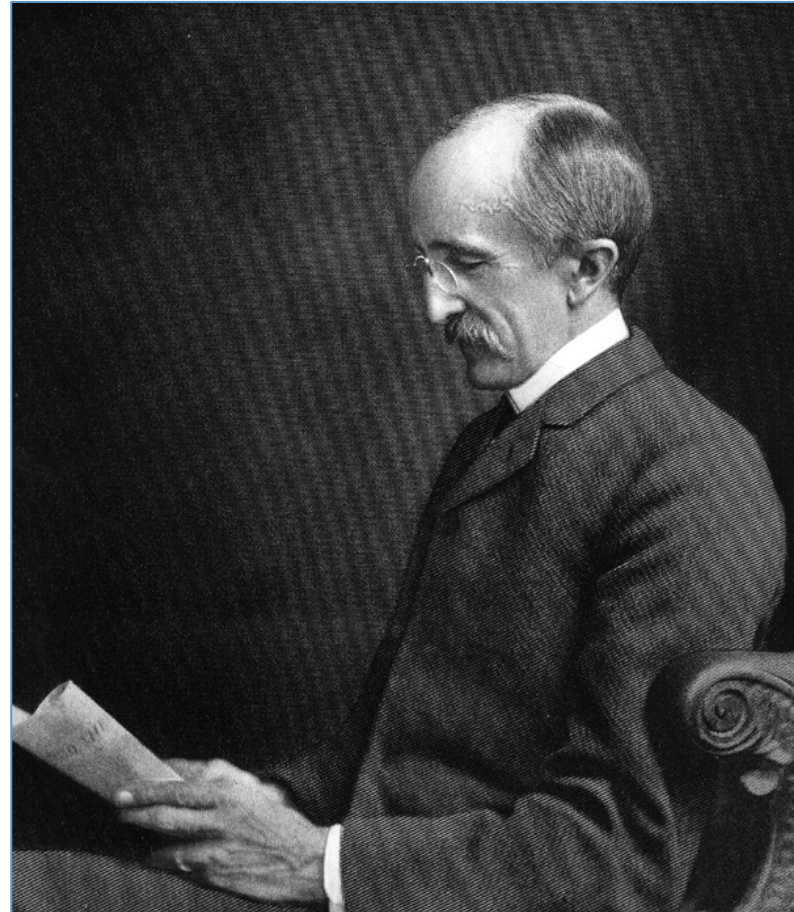
Koch and the Tuberculin story are a major story arc in the 6 episodes of the Netflix series, "Charité," which takes place at the famous Charité hospital in Berlin during the late 1880s.
[https://en.wikipedia.org/wiki/Charit%C3%A9_\(TV_series\)](https://en.wikipedia.org/wiki/Charit%C3%A9_(TV_series))

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Sanatoria: The Cottage Age

- **1854** – Hermann Brehmer established the first anti-tuberculosis sanatorium in Germany. He thought TB was linked to the heart not irrigating the lungs properly and suggested patients convalescing in regions well above sea level would help the heart function more efficiently
 - **1877** – Based on a prescription of high altitude, fresh air and good nutrition, TB sanatoria spread in Europe and beyond
 - **1884** – New York City physician, Edward Trudeau, establishes Adirondack Cottage Sanatorium as a research facility and a safe haven for TB sufferers
- Infected himself, Trudeau had been advised to spend time in the Adirondack Mountains to benefit from the fresh air; he soon grew stronger and gained weight, but deteriorated when he returned to NYC



Dr. Edward Trudeau and the Adirondack Cottage Sanatorium, Sarnack Lake, NY

Sanatoria: The Cottage Age

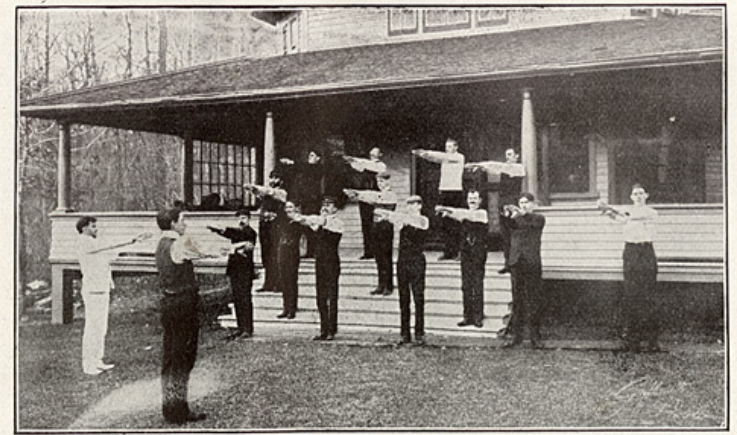


William James Gage (1849-1920)

- **1880** – TB mortality rate in Canada was about 200 per 100,000; 180 in **1901** and about 165 in **1908**, although disease classifications varied and reliable national statistics did not start until 1926
- Nevertheless, TB was relentless during the late 19th century, especially in Toronto
- **1893** - inspired by Trudeau's Adirondack Cottage Sanatorium, Toronto publisher and philanthropist, William J. Gage, decided to commit himself to the sanatorium movement
- **1894** – Gage offered \$25,000 to fund a TB hospital in Toronto, but was denied due to popular and political fears of the disease in the city
- **1896** – Led by Gage, the National Sanatorium Association established to examine possible sites for Canada's first sanatorium, which would be tailored according to patients' social class (paying or free patients) and disease status (early or late stage)

Sanatoria: The Cottage Age

- The first sanatorium was built for private patients with incipient (early-stage) TB; the NSA then expanded its building program to include sanatoria for free (non/partial paying) early stage patients, free advanced-stage patients, and private advanced stage patients
- **1897** – NSA received a bold offer of \$10,000 from the town of Gravenhurst, ON, inviting the establishment of the 35-bed Muskoka Cottage Sanatorium on a peninsula on Lake Muskoka, which opened on July 13, 1897
- With the area's proliferation of vacation cottages, the dramatic and rocky landscape of Muskoka provided an ideal setting for the fresh-air cure prescribed during this period
- MCS patients, who stayed an average of 98 days, were charged \$6 per week, the main focus of treatment on rest and good nutrition

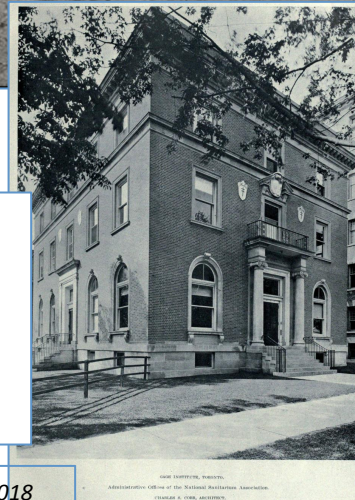


BREATHING EXERCISES, MALE PATIENTS, MUSKOKA COTTAGE SANATORIUM.

The Muskoka Sanatorium followed the Trudeau “cottage plan”: a central administration building for shared services with smaller separate cottages to accommodate patients

Sanatoria: The Cottage Age

- **1900** – With Gage’s leadership, the “Toronto Association for the Prevention and Treatment of Consumption and Other Forms of Tuberculosis” created, as was the Canadian Tuberculosis Association (then Canadian Lung Association in 1977)
- **1902** – Gage also helped lead the establishment of the Muskoka Free Hospital for Consumption (top) (the first free sanatorium in the world)
- **1904** – The Toronto Free Hospital for Consumptives opened (later West Park Hospital) (centre)
- **1914** – The Gage Institute opened as an out-patient clinic for TB patients; today the building is home to DLSPH Division of Occupational and Environmental Health (bottom)



Sanatoria: The Cottage Age

- By the start of WWI there were 30 sanatoria in Canada, with a total of 1,800 beds available for TB patients across 7 provinces; by 1934 there were 12 sanatoria in operation in Ontario alone
- However, not everyone could afford, or had access to, a sanatorium and, as was evident in the poorer parts of pre-WWI Toronto, sanatoria-style tents were often set up in backyards to enable outdoor isolation

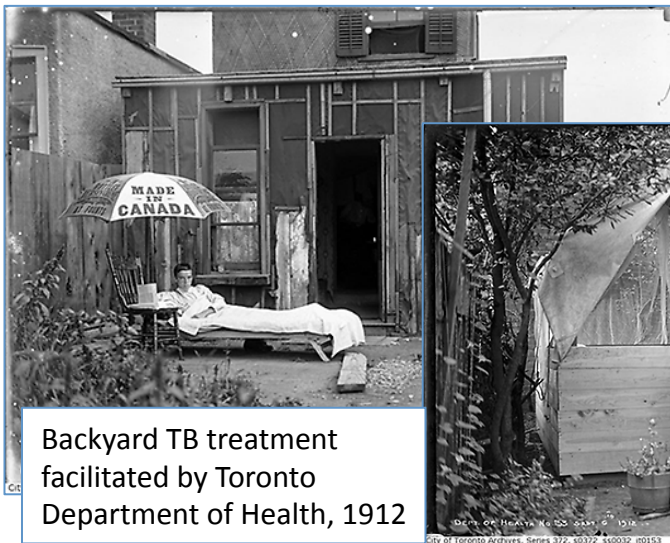


St. John's Sanatorium, NF, originally built in 1917



Fort Qu'Appelle Sanatorium, SK, built in 1917

King Edward Sanatorium, Tranquille, BC, opened in 1907

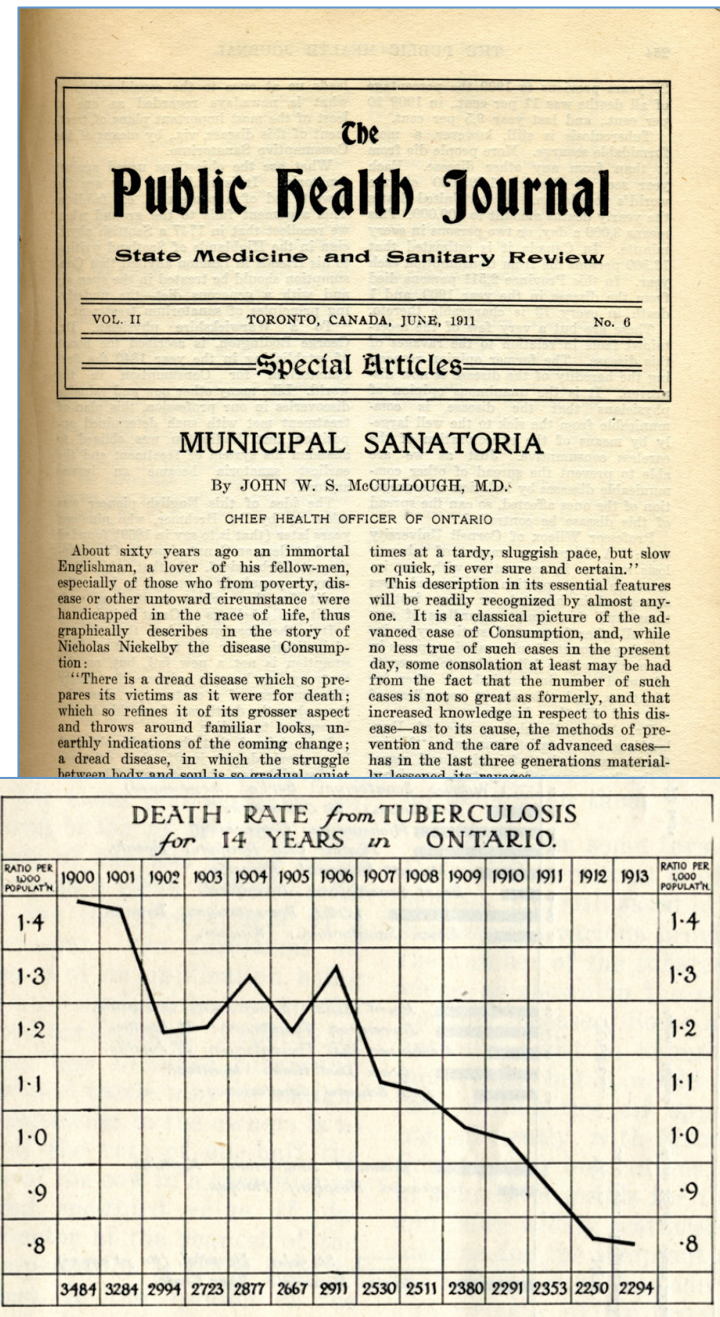


Backyard TB treatment facilitated by Toronto Department of Health, 1912



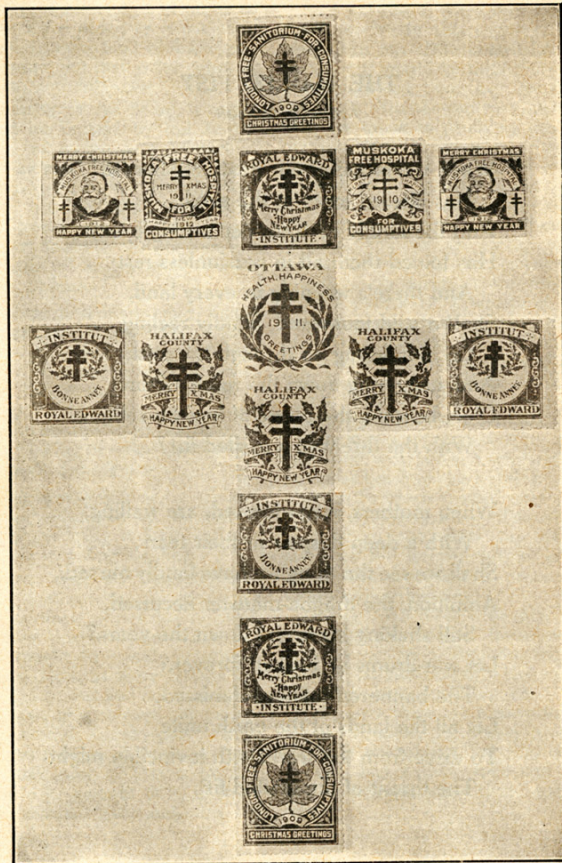
TB and Governments: Provincial Perspectives

- **1882** – Very significant year in the history of TB, with the discovery of “Koch’s bacillus,” and in the history of public health in Ontario with the establishment of the Provincial Board of Health; other provinces would soon follow suit
- **1890** – Ontario the first jurisdiction in North America to establish a provincial/state public health laboratory, enabling diagnostic testing services for local health departments, such as to identify TB cases using throat swabs and tuberculin skin tests
- Provincial laboratories also tested water and milk supplies to protect against bacterial contamination, especially the spread of bovine tuberculosis through dairy farms; pasteurization (careful heating of milk) soon became widely utilized to further protect the milk supply



(Canadian) Public Health Journal (Jan. 1916)

TB and Governments: Provincial Perspectives



Canadian Christmas stamps, from the sale of which thousands of dollars have been raised for the Anti-Tuberculosis Campaign.

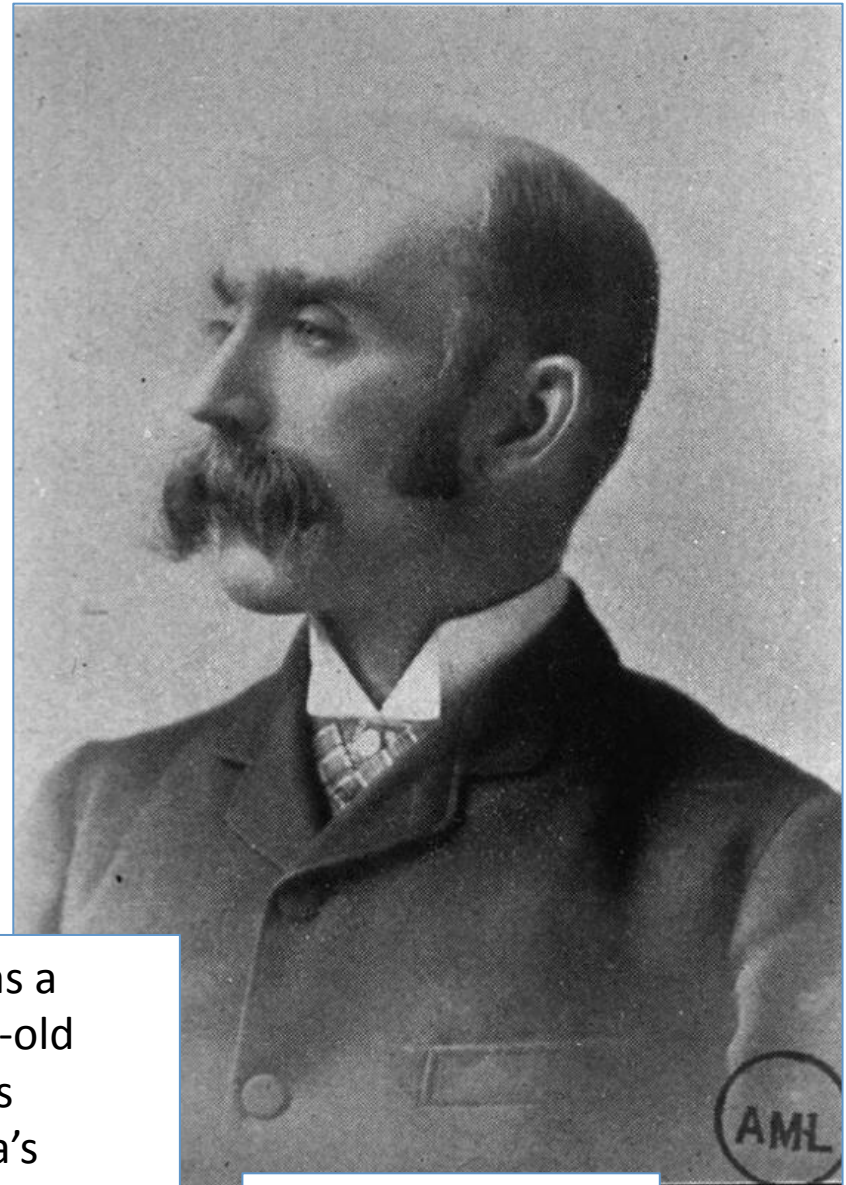
(Canadian) Public Health Journal (Dec. 1914)

- **1900** – Building on the TB voluntary momentum, the creation of the Canadian Tuberculosis Association, led by concerned laypersons and medical professionals, had a significant impact on the development of a distinctively Canadian response to TB by provincial governments
- The CTA advocated tirelessly on behalf of tuberculosis patients for sustainable infrastructure, government responsibility, education and research
- This effort intuitively grasped the significance of Sir William Osler's prophetic words, "Tuberculosis is a social disease with a medical aspect"

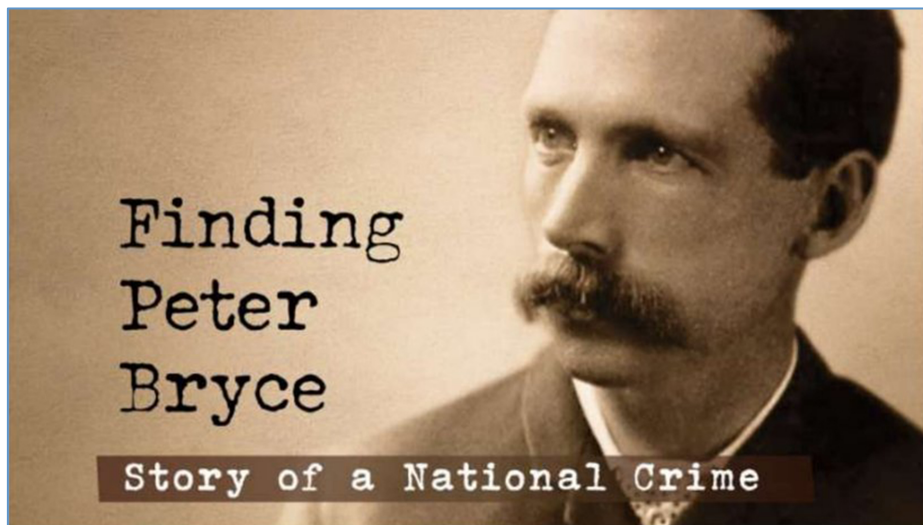
1908 – The annual "Christmas Seals" campaign became the major fundraising focus of the CTA, inspired by an international initiative started in Denmark in 1903

Dr. Peter H. Bryce: Public Health Pioneer

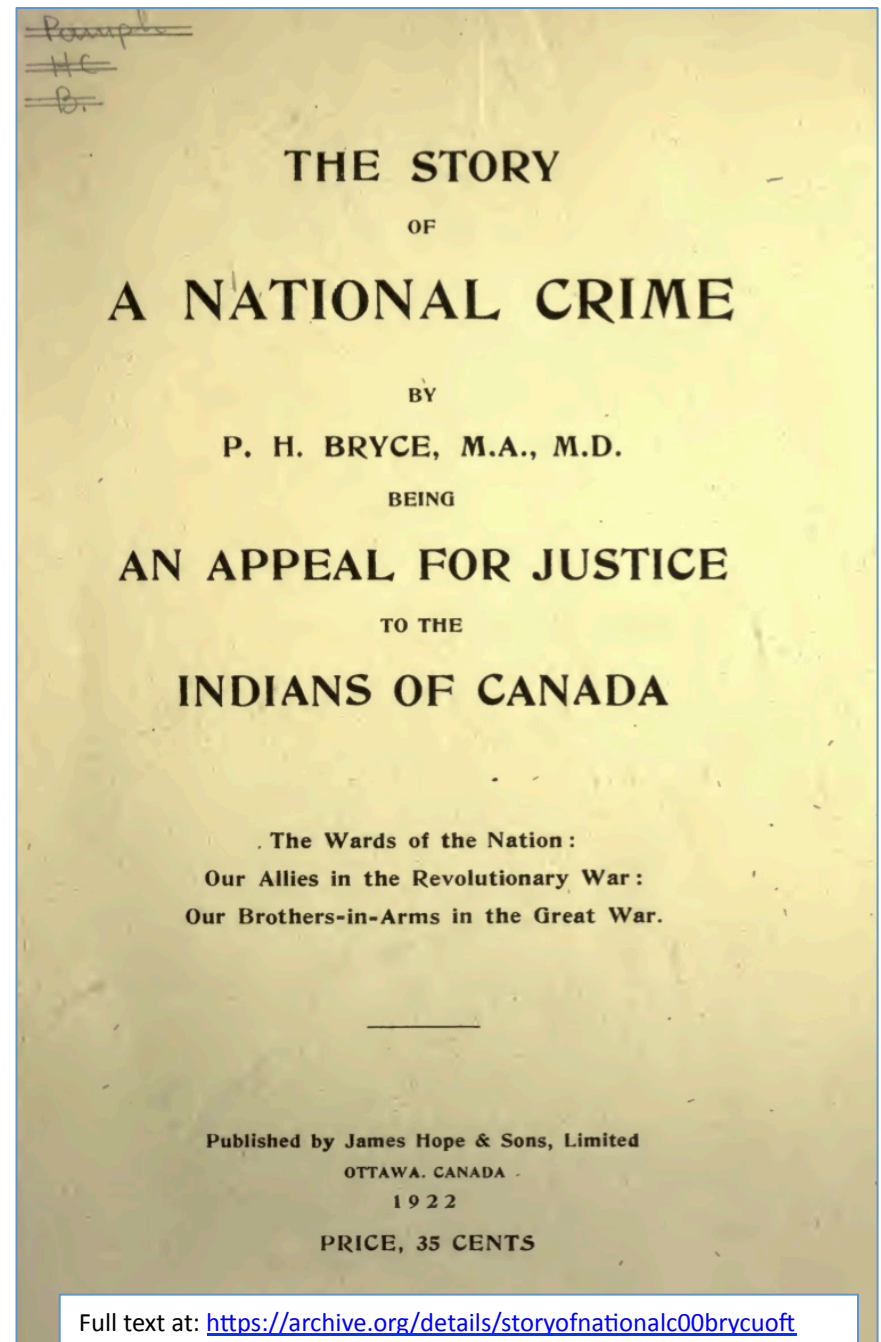
- Dr. Peter Henderson Bryce (1853-1932) was a key member of the Canadian Tuberculosis Association and in 1904 brought his special expertise with the disease, and 22 years of experience as Ontario's Chief Medical Officer of Health, to Ottawa when he was appointed the first Chief Medical Officer of the Department of the Interior & Indian Affairs
 - **1882** – Bryce's appointment as first full-time Chief MOH of the newly established Ontario Provincial Board of Health coincided with Koch's demonstration that the tubercule bacillus caused Tuberculosis
- Tuberculosis defined and drove Bryce's career as a public health physician; it had killed his 17-year-old sister in 1876, would kill his son in 1931, and his pioneering work on the impact of TB on Canada's Indigenous population echoes to this day...

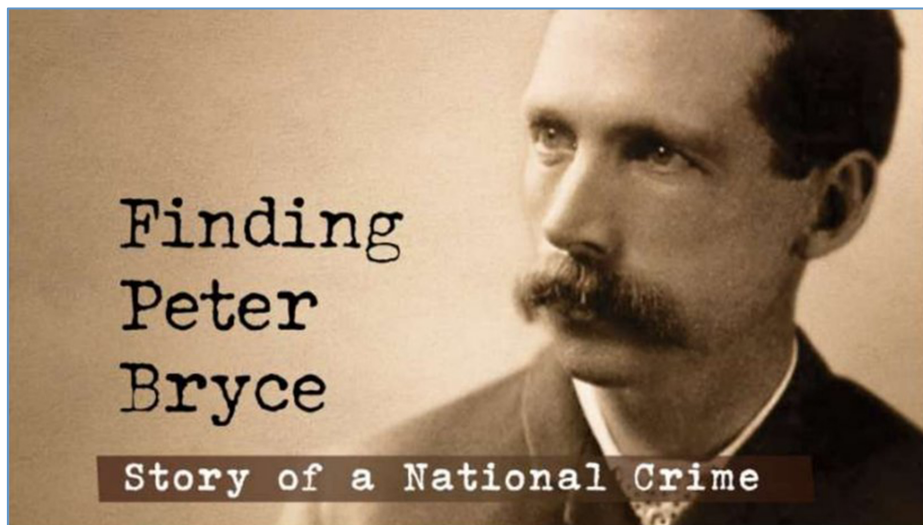


<http://wherearethechildren.ca/en/>



- “Finding Peter Bryce: Story of a National Crime” is a newly completed documentary by Dr. Peter H. Bryce’s great-grandson, Andy Jay Bryce, and filmmaker Peter Campbell
- See Andy Bryce’s blog for more on his documentary journey - <https://andyjaybryce.com/>
- This preview of the documentary nicely sets the scene...



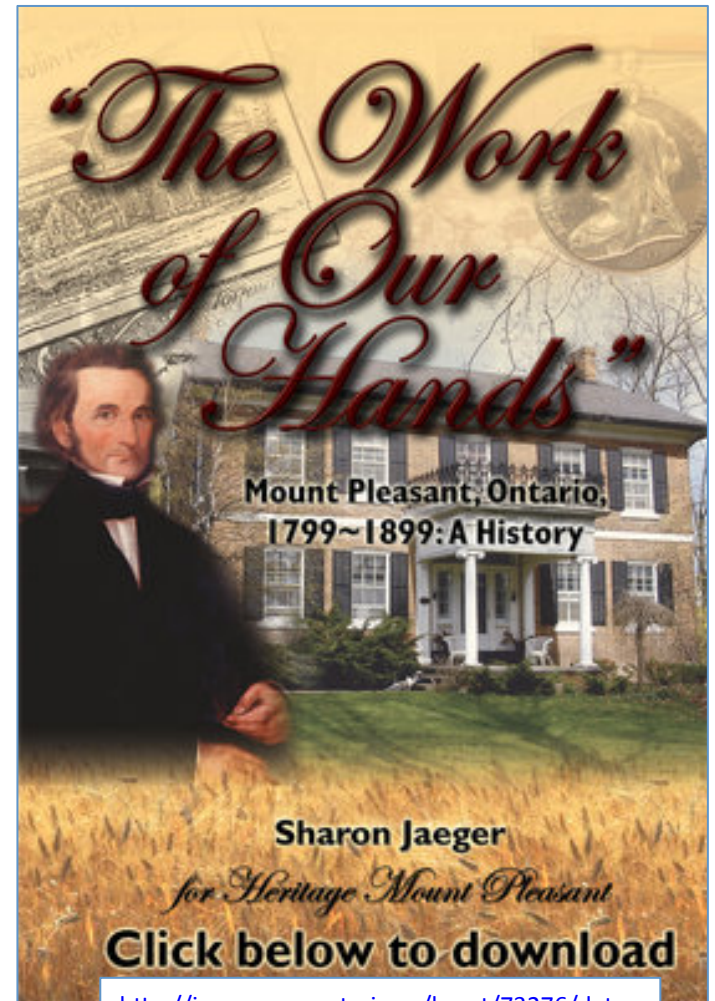


- “Finding Peter Bryce: Story of a National Crime” preview is posted at,
- <https://vimeo.com/189577852>
- The full documentary premiered in May 2018 and is available via:
https://www.movingimages.ca/store/products.php?finding_peter_bryce



Dr. Peter H. Bryce: Who Was He?

- **Aug 17, 1853** – Peter Bryce was born in Mount Pleasant, Ontario (near Brantford and next to Six Nations Reserve), the son of George Bryce Sr, well known for his work in the Presbyterian Church and his liberalism; Peter's older brother George Jr. helped build the Manitoba education system
 - **1876-81** – After an undergraduate degree at the University of Toronto focused on sciences, Peter became Professor of Science at University of Guelph; he then completed medical school at U of T, followed by studies in Edinburgh and Paris, his last year focused on the learning the new bacteriological techniques of Pasteur and Lister
- Back in Toronto, and uniquely educated, Bryce became active in Ontario's growing public health movement, leading to his 1882 appointment as Chief MOH



<http://images.ourontario.ca/brant/73276/data>

Dr. Peter H. Bryce: Bold in Ontario

- Initially, the Ontario Board of Health's role was strictly advisory to local boards of health, with no legal authority until the passage of a revised and stronger Public Health Act in 1884; Bryce was its primary author

- Among the new powers of the Board was investigating the causes of disease and issuing regulations to prevent their spread, secure sanitary conditions and establish quarantine

- The Ontario Board of Health and its Public Health Act served as the model for other provinces, as well as states south of the border

THE SANITARY JOURNAL.

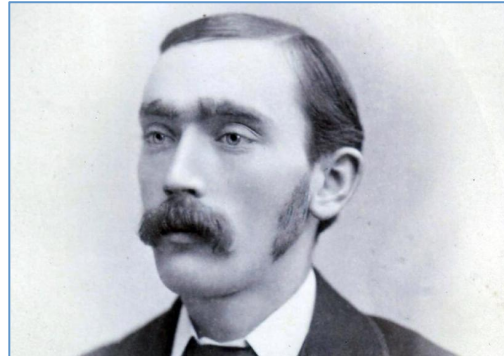
[Vol. VI.]

APRIL 15TH, 1884.

[No. 7.]

ONTARIO HEALTH LEGISLATION.

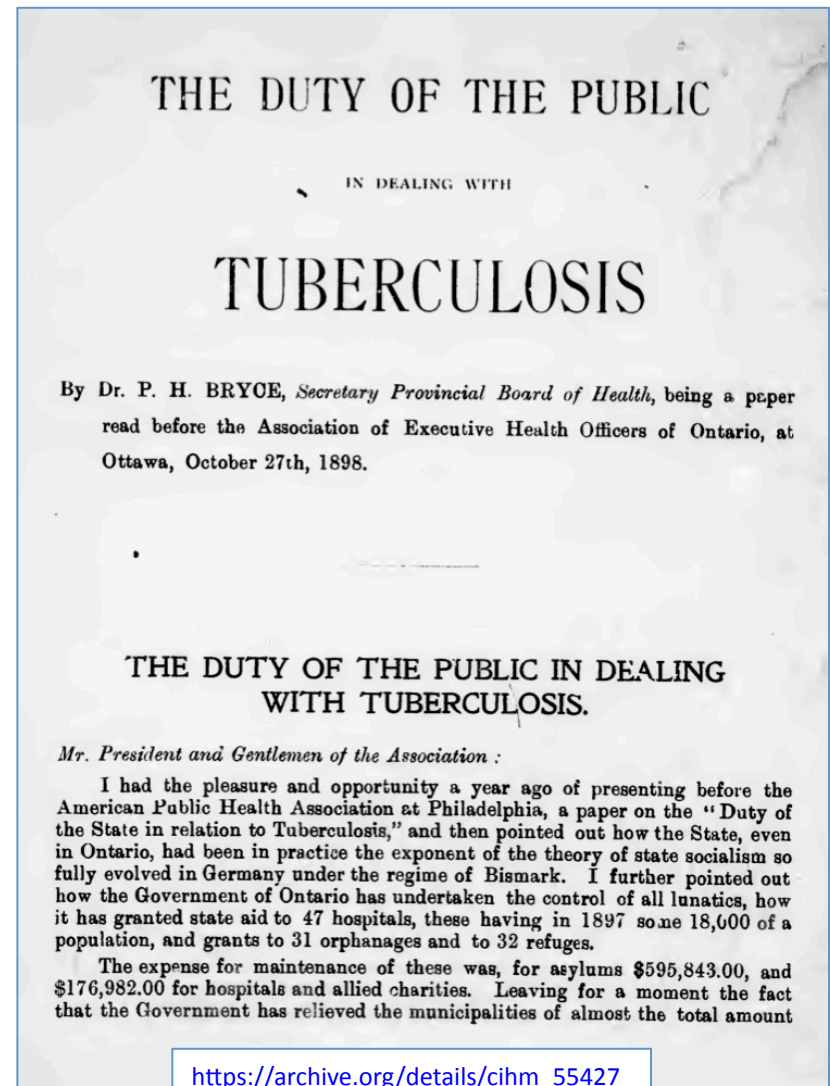
Since the last issue of this JOURNAL the Legislative Assembly of Ontario passed an Act to make further provisions for promoting the public health, to be known as the Public Health Act of 1884. It embodies many valuable features and if its provisions are carried out much sickness will doubtless be prevented and many lives saved. It provides that the provincial board of health may issue regulations to prevent the spread of disease, to secure sanitary conditions, and to establish quarantine, the local board of health being charged with the enforcement of the regulations. The board is authorized to



conduct investigations into the causes of disease. A local board of health is to be formed in each city, village and township; though two or more localities may unite their municipalities into a health district. The local health boards, or district boards, appoint their medical health officers. Any costs recoverable from an owner, in abating nuisances, may be recovered from the occupier and deducted from the rent. The local board of health is to make inspection for nuisances and order their abatement. Offensive trades may not be established without the consent of the municipal council. Plans relating to proposed systems of water-supply or sewerage must be submitted to the provincial board of health, and no sewer or appliance for their ventilation shall be constructed in violation of any principles laid down by it. Health officers and sanitary inspectors have power to inspect meat and other articles of food. Householders and physicians must report cases of small-pox, diphtheria, scarlet fever, cholera or typhoid fever within twenty-four hours.

Dr. Peter H. Bryce: Public Health Leader

- By the turn of the new century, Bryce's attention was increasingly focused on the relentless threat of tuberculosis, dedicating his expertise to the newly established Canadian Association for the Prevention of Tuberculosis
- **1900** – He also became the first Canadian President of the American Public Health Association
- **1904** – Bryce was thus ideally suited for a move to the federal government to serve as the first Chief Medical Officer for the Departments of the Interior & Indian Affairs

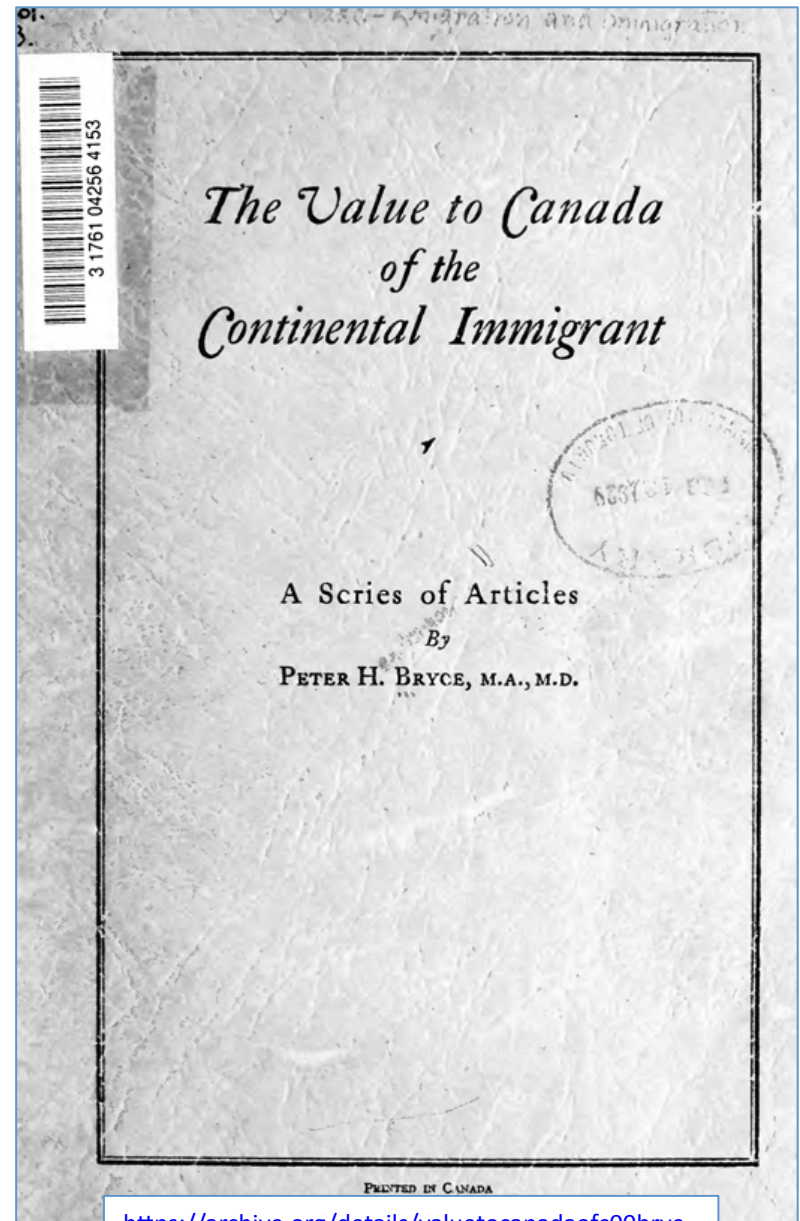


https://archive.org/details/cihm_55427

- He was also well placed to shift public health debates from the TB Association's platforms to the offices of senior federal government officials

Dr. Peter H. Bryce: Public Health Leader

- **1904-07** – Bryce's initial focus in his new position was on the health of new immigrants that were flowing into western Canada
- He provided medical and scientific evidence for preferring immigrants from the more rural parts of southern and eastern Europe, rather than urban centres in Britain and the US; as Bryce documented, the former were more self-sufficient and less vulnerable to tuberculosis, mental illness and economic hardship
- Bryce's position on immigration, based on ethnic neutrality, and his aversion to rapid urban growth and its inherent threat to public health, was out of step with the prevailing pro-British, pro-urbanization political and social culture of the early 20th century



Dr. Peter H. Bryce: Bold and Relentless

- Bryce's main focus soon shifted to Indigenous health issues, especially the health conditions of "Indian Boarding Schools"; the federal system of native schools was formally established in 1879 and the term "residential schools" officially adopted in 1923
- Growing up next to the Six Nations Reserve, Bryce had a familiarity with, and sympathy for, the Indigenous population, although he generally agreed with the prevailing assimilationist view
- Bryce was concerned about the health conditions of residential schools based, in particular, on an 1890 physician's report to the Dept. of Indian Affairs that concluded tuberculosis in the schools could be reduced by half; but the suggestions were "too costly"



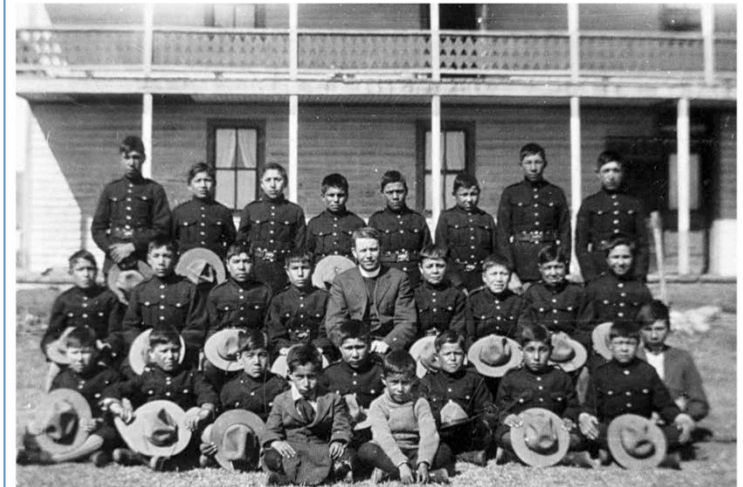
Blackfoot leader White Pup told Indian agent Magnus Begg in April 1895, "When children are taken sick at Industrial Schools, they should be sent home so that their parents could look after them, and not be kept until they are ready to die."

Glenbow Museum, NA-1773-24.

- While Ontario' Chief Health Officer, Bryce had set up tent sanatoriums in Indigenous communities, staffed by nurses

Dr. Peter H. Bryce: Bold and Relentless

- In early 1907, Bryce was asked by the Superintendent-General of Indian Affairs to closely assess the health situation of the native residential schools of the west; the schools were funded by the federal government and operated by various church denominations
 - **1904-06** - In his initial Annual Reports to the Dept. of Indian Affairs, Bryce commented on the lack of statistics and poor record keeping by local medical officers
 - He also emphasized the need for preventive medicine and modern treatment facilities for Indigenous people, including small tent hospitals on or near reserves, along with nurses
- Bryce estimated the TB death rate among Canada's Indigenous population was 34.7 per 1,000, compared to 1.8 for the general population



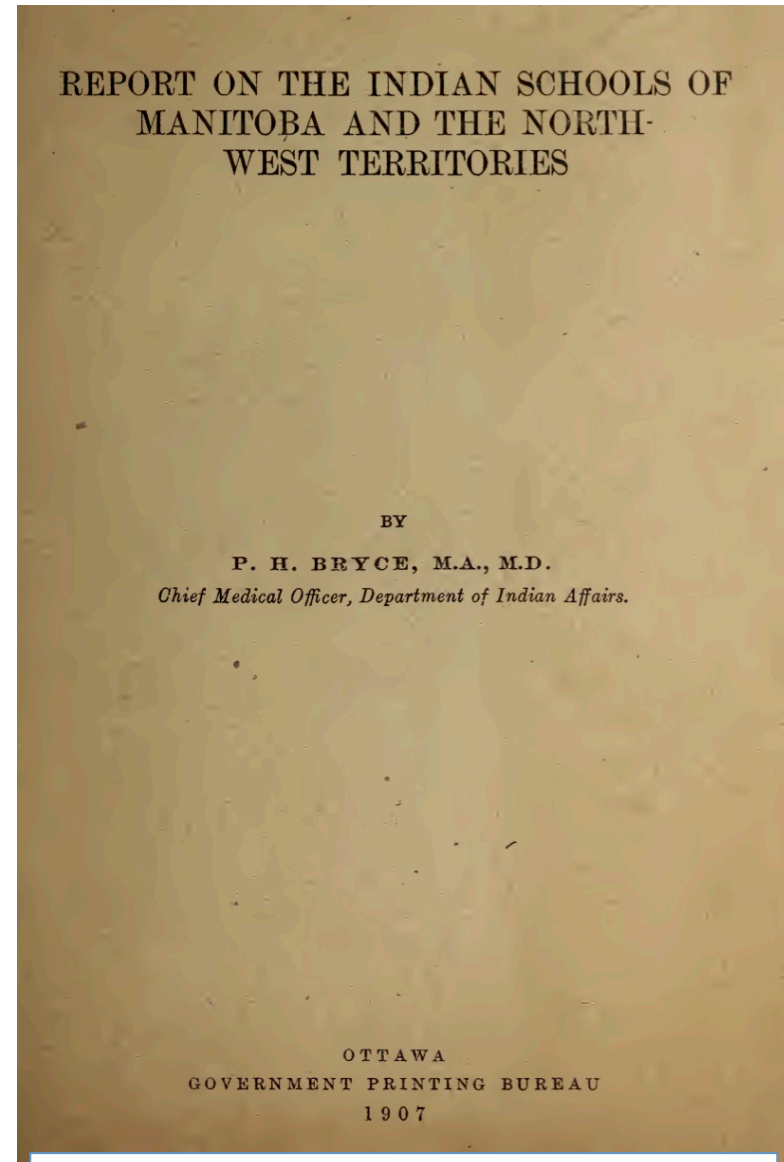
The construction of both a Roman Catholic boarding school (top) and an Anglican boarding school (below) at Onion Lake, Saskatchewan, was a result of the inter-church competition that plagued the residential school system. Library and Archives Canada, PA-44537; General Synod Archives, Anglican Church of Canada, P7538-360.

Dr. Peter H. Bryce: Bold and Relentless

- **March – May 1907** – Bryce personally visited 35 industrial and boarding schools for native children in Manitoba, Saskatchewan and Alberta, his main focus on health issues related to the buildings and management of the schools
- **June 19, 1907** - Bryce's *Report* formally submitted and distributed internally and to church partners



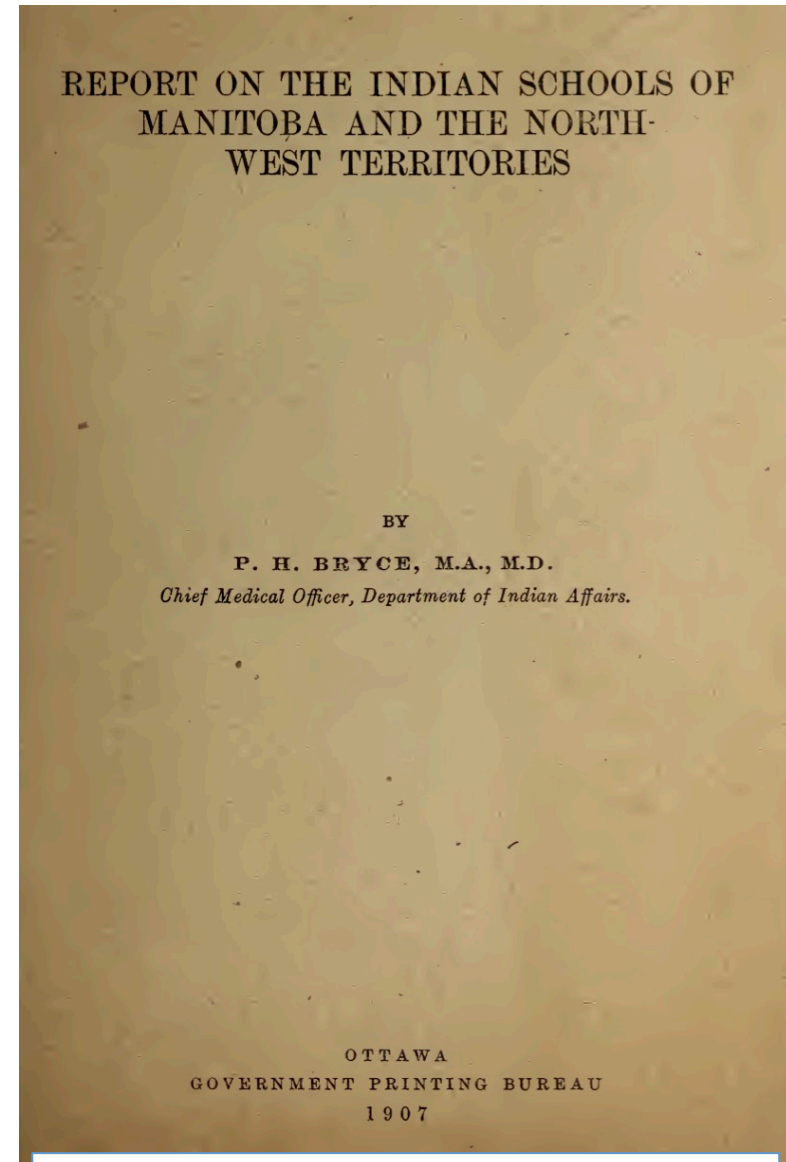
https://www.youtube.com/watch?v=V1NQ_tgR_oA



Full text at: <https://archive.org/details/reportonindiansc00bryc>

Dr. Peter H. Bryce: Bold and Relentless

- Bryce's main findings stressed that a large number of students already infected with contagious diseases, especially TB, had been admitted to the schools without medical inspection, and that the buildings were in "defective sanitary condition," especially with ineffective ventilation systems
- It was "almost as if the prime conditions for the outbreak of epidemics had been deliberately created"
- Of 1,537 students with records, nearly 25% were dead, Bryce concluding there was an "intimate relationship between the health of pupils while in school and that of their early death subsequent to discharge"



Full text at: <https://archive.org/details/reportonindiansc00bryc>

Dr. Peter H. Bryce: Bold and Relentless

- Bryce's colleagues in the government and in the field were initially supportive of the *Report's* recommendations, but church leaders were critical, pointing to poor federal funding as the main problem; there was also a lingering belief that the native population's vulnerability to TB was hereditary and incurable
- Nov. 1907** – Bryce's *Report* was leaked to journalists, the publicity prompting more intense criticism as well as support for his recommendations, including increased funding and the removal of the church's role in the schools
- 1909** – After a close inspection of 243 children in southern Alberta residential schools, Bryce submitted another *Report* that reinforced and expanded on his previous recommendations; however, they were not well received

THE INDIAN SCHOOLS. HEALTH OF THE PUPILS VERY UNSATISFACTORY.

Large Percentage of Deaths from Consumption — Ordinary Requirements of Ventilation of Dormitories Neglected.

(Special Despatch to The Globe.)

Ottawa, Nov. 15.—Dr. P. H. Bryce, Chief Medical Inspector to the Department of Indian Affairs, in a special report upon Indian schools conducted under Church auspices with Government assistance, states that tuberculosis is alarmingly prevalent among the pupils. Of a total of 1,537 pupils reported from fifteen schools, which have been in operation on an average of fourteen years, 7 per cent. are sick or in poor health, and 24 per cent. are reported dead. In almost every instance the cause of death is given as tuberculosis. In one school no less than 69 per cent. of the art pupils are dead. In only one school which Dr. Bryce visited was attention paid to the most ordinary requirements of the ventilation of dormitories.

The total school attendance in the Indian schools of every class was 2,691 last year. Only about 52 per cent. of Indian children between the age of seven and seventeen attend school, and the attendance at the industrial schools is decreasing.

The Globe, Nov 16, 1907, p. 8

SCHOOLS AID WHITE PLACUE

Startling Death Rolls
Revealed.

—AMONG INDIANS

Absolute Inattention To
Bare Necessities
of Health.

In his report upon the Indian boarding schools in Manitoba and the Northwest, Dr. P. H. Bryce, chief medical officer of the Indian department, emphasizes the "absolute necessity" for greater care in the selection of pupils and for sanitary precautions in the schools to prevent the spread of disease. During his recent tour of inspection Dr. Bryce instructed the principals of all the schools to report to Ottawa direct upon the past history and present condition of the health of the children who have been pupils at the schools.

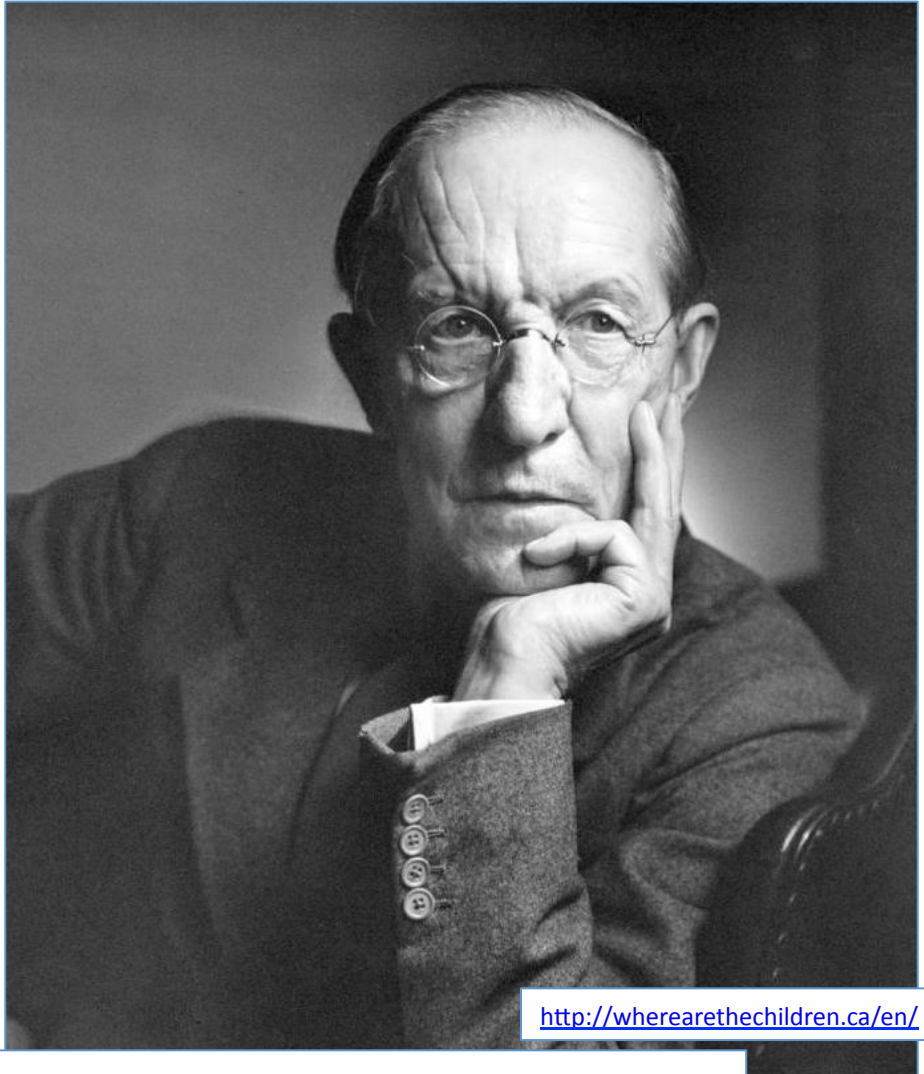
Summarizing the statistical statement thus obtained Dr. Bryce says, after alluding to the defective records of the schools: "It suffices for us to know however, that of a total of 1,537 pupils reported upon, nearly 25 per cent. are dead, of one school with an absolutely accurate statement, 69 per cent. of pupils are dead, and that everywhere the almost-invariable cause of death given is tuberculosis."

Dr. Bryce's description of the schools shows them to be veritable hothouses for the propagation and spread of this disease. In fact, in only one school which the medical inspector visited was attention paid to the most ordinary requirements of ventilation of the dormitories.

The total school attendance in Indian schools of every class was 2,691 last year. Only about 52 per cent. of Indian children between the ages of seven and seventeen attend school, and the attendance at the industrial schools is decreasing.

Ottawa Citizen, Nov 15, 1907, p. 1

Dr. Peter H. Bryce: Federal Frustrations

- **1909** – Appointed as Superintendent of Education in the Department of Indian Affairs, Duncan Campbell Scott quickly became Bryce's strongest and most powerful critic
 - While he made minimal changes to health management in the residential schools, Scott's claim of lack of federal funds thinly masked his strong personal and political preference for aggressive assimilation of the Indigenous population as quickly as possible
- 
- <http://wherearethechildren.ca/en/>
- **1913** – When Scott became Deputy Minister of Indian Affairs, he effectively pushed Bryce out of Indian Affairs, restricting his work to immigrant health

Dr. Peter H. Bryce: Federal Frustrations

- **1913-19** – Bryce's marginalization from native affairs in the face of such tragic evidence of preventable disease and death left him in a virtual purgatory for a man so used to the quick identification and bold resolution of public health problems
 - Adding to Bryce's frustration was being asked to draft a plan for the long delayed federal department of health, only to have his recommendation for its inclusion of native medical services ultimately rejected
 - Indeed, from 1918-27 the Department of Indian Affairs would have no Medical Officer or Medical Branch
- **1919** – Bryce was then denied the position of its first Deputy Minister of Health despite his obvious and unsurpassed qualifications
 - **1921** – Scott completed this process by expediting Bryce's retirement from the federal government

FEDERAL HEALTH DEPT. SANCTIONED

Senate Committee to Report on Improving Ad- ministration

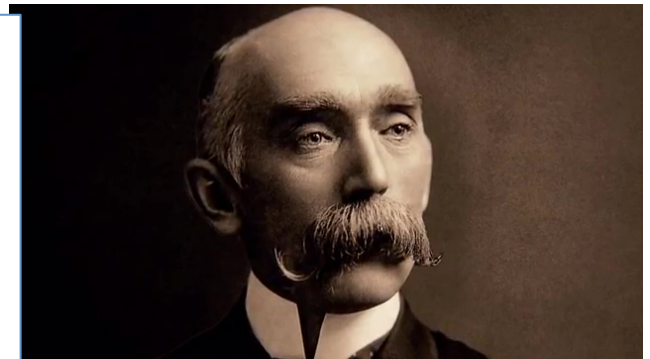
(Canadian Press Despatch)

Ottawa, May 6.—Authority for the creation of a Dominion Department of Public Health has been given Parliamentary sanction and now requires only the assent of the Governor-General to become law. The measure to-day was given third reading in the Senate, having previously passed the Commons.

To Improve Administration.

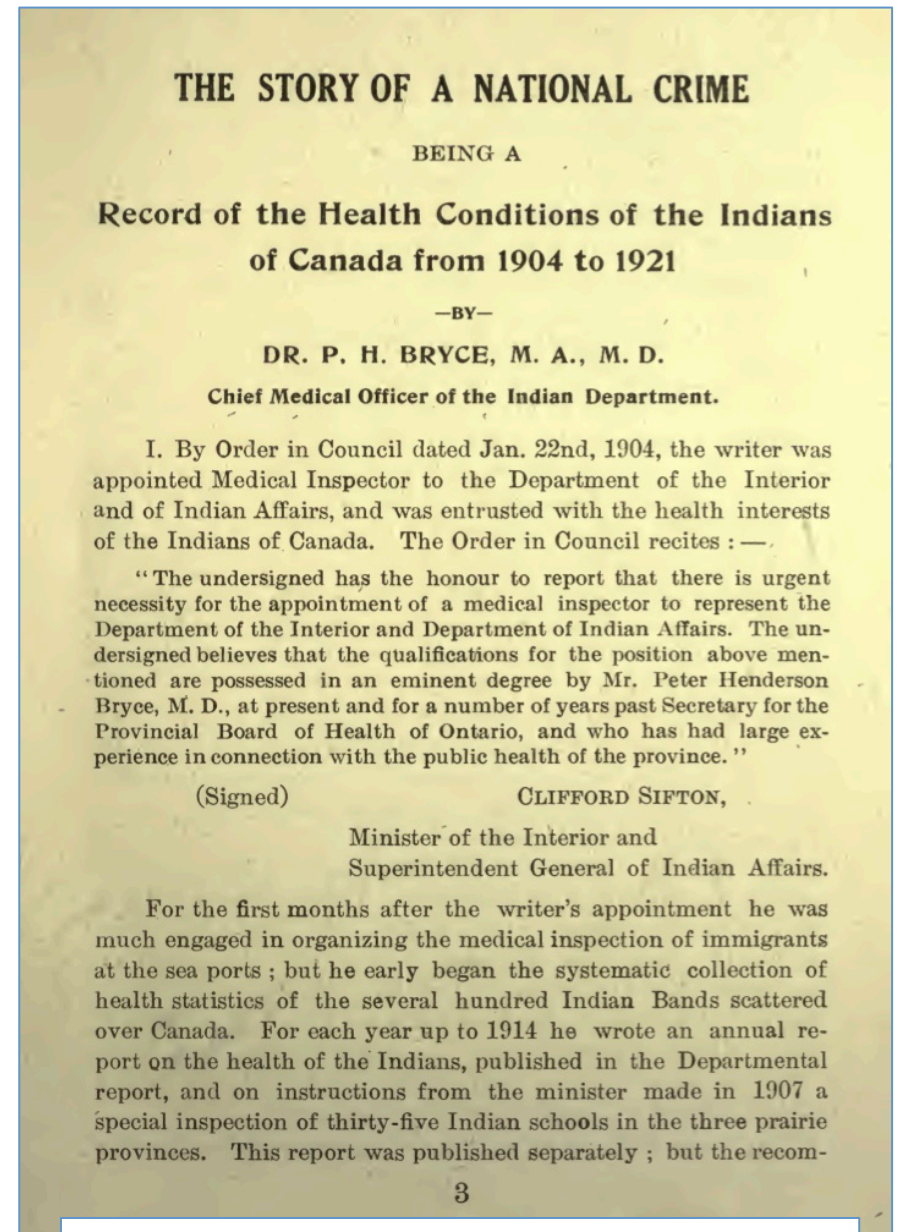
The improvement of Canadian Government administration will be considered by a committee of the Senate, with a view to making suggestions for the improvement of the existing system. The proposal was put forward some days ago by Senator McLennan, and to-day he secured the appointment of a special committee "to consider and report on the possibility of bettering the machinery of Government." Those named to the committee were: Sen-
ate and

The Globe, May 7, 1919, p. 2



Dr. Peter H. Bryce: Bold and Relentless

- **1922** – However, free of his government responsibilities, Bryce would get his revenge in a unique and characteristically bold way by independently publishing the booklet, *The Story of a National Crime: Being A Record of the Health Conditions of the Indians of Canada from 1904 to 1921*
- While still bitter about his treatment, especially by Scott, Bryce's point in publishing this detailed work was to demonstrate that the federal government was doing the Indigenous population of Canada a major injustice and was calling for the correction of these wrong-doings, preferably under his direction



Full text at: <https://archive.org/details/storyofnationalc00brycuoft>

Dr. Peter H. Bryce: Fading Light

- **1922-32** – However, while he continued with some work in native health, during his retirement Bryce would follow other interests, particularly along more literary and historical lines, including as a founder of the Canadian Historical Association
- **Jan 15, 1932** – Peter Bryce died suddenly while travelling by steamship to the West Indies, just 2 weeks after the death of his youngest son due to tuberculosis
- By this time, tuberculosis treatment had become a major focus of attention and growing investment among the provincial governments, but with almost no attention or investment by the federal government into TB control among the Indigenous population

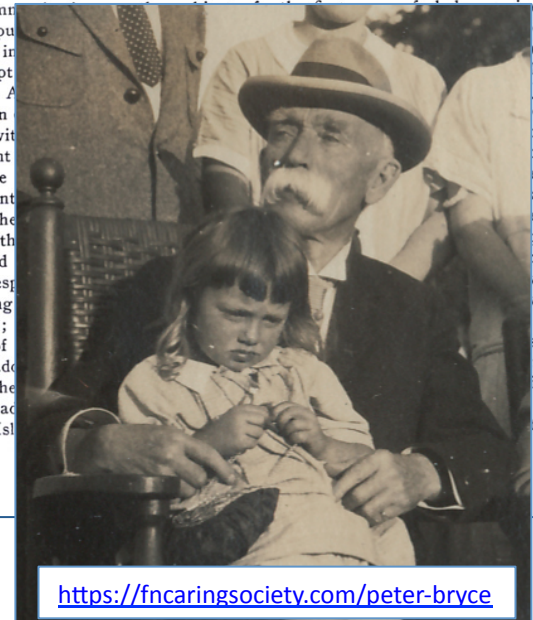


HISTORY OF PUBLIC HEALTH IN CANADA

By P. H. BRYCE, M. A., M. D.
Chief Inspector of Immigration, Ottawa, Canada

I find that one of the first references to public health in Canada was contained in a comm... ing with them a five-pounder to bring ships to anchor, and on April 28th, 1832, on the... had died... cholera... June 14th... dated the... Sir John... of Upper... e proceed... aling with... ed Asiatic... eared at... h inquiry... whether he... with which... charitable... signed by... A simi... from Pres... dated the... the Lieut.-

A squad... Grosse Isl...



<https://fncaringociety.com/peter-bryce>

TB and Governments: Provincial Perspectives

- **1910-11** - Ontario Provincial Board of Health initiated several TB prevention and education strategies;
- Included compulsory reporting of diagnosed cases, mandatory inspection of dairy herds, and a comprehensive public awareness campaign based on pamphlets, photos, lectures, displays, sanatoria models and travelling exhibits
- Travelling exhibits took on a more literal meaning by setting them up in a train car that stopped at railway stations around the province; there were also exhibits and public demonstrations set up at selected stations



Ontario TB public education initiatives: travelling on a train, c. 1910, and at a public event, 1930s

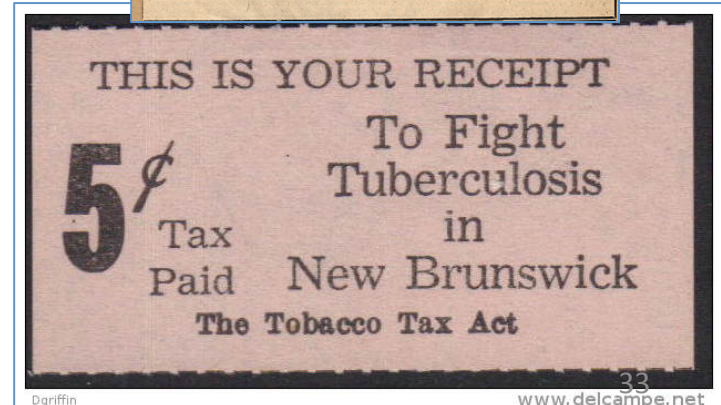
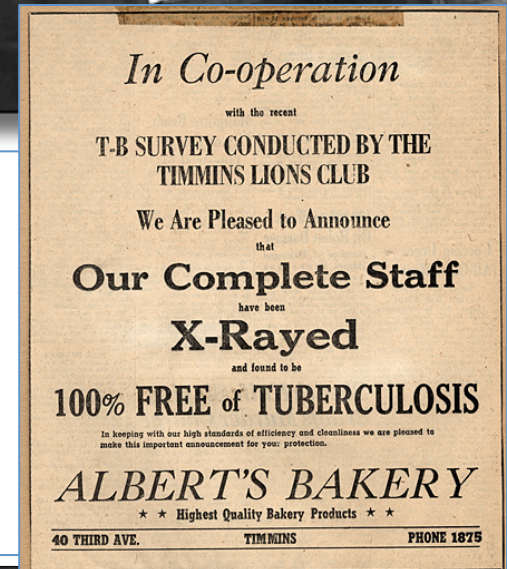
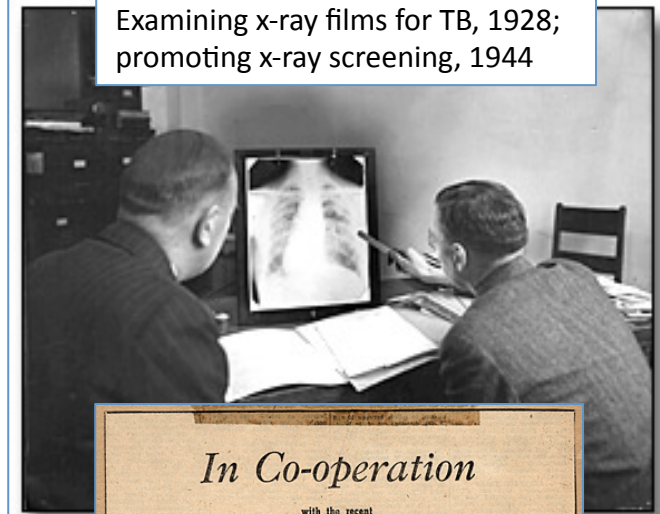


- **1921** – Creation of the Division of Public Health Education (pioneered in Ontario) resulted in more ambitious TB education exhibits

TB and Governments: Provincial Perspectives

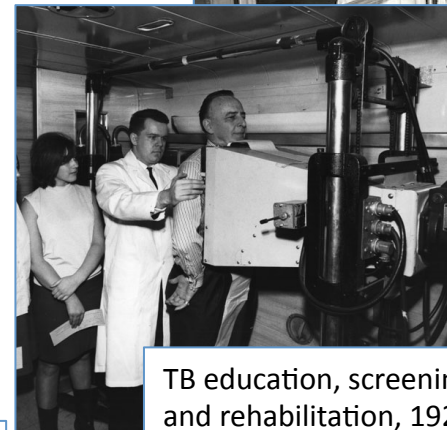
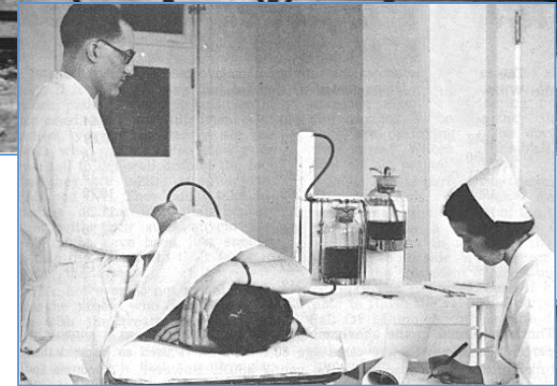
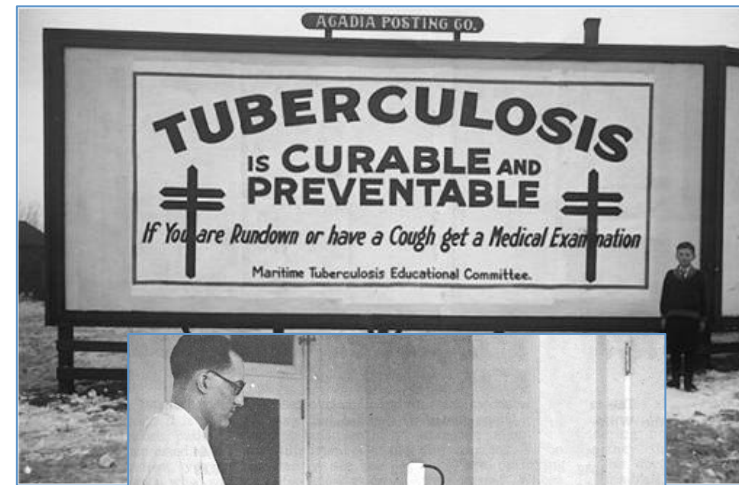
- Provincial TB strategies varied across the country, especially prior to the establishment of the Federal Health Grants program in 1948, which included shared federal-provincial funding for TB services
- 1921** – Saskatchewan launched the first TB school survey in the country; 170,000 children surveyed, 56% found to be TB+; similar x-ray surveys undertaken in 8 other provinces
- 1923** – Ontario Board of Health launched the first travelling TB clinic utilizing mobile x-ray machines, providing diagnosis, treatment and follow up; mass surveys began in the mid-1940s
- 1940** – New Brunswick imposed a unique “Tobacco Tax” on the retail price of all forms of tobacco, the proceeds distributed to municipalities to directly pay for TB sanatoria treatment @\$1/patient-day

Examining x-ray films for TB, 1928;
promoting x-ray screening, 1944



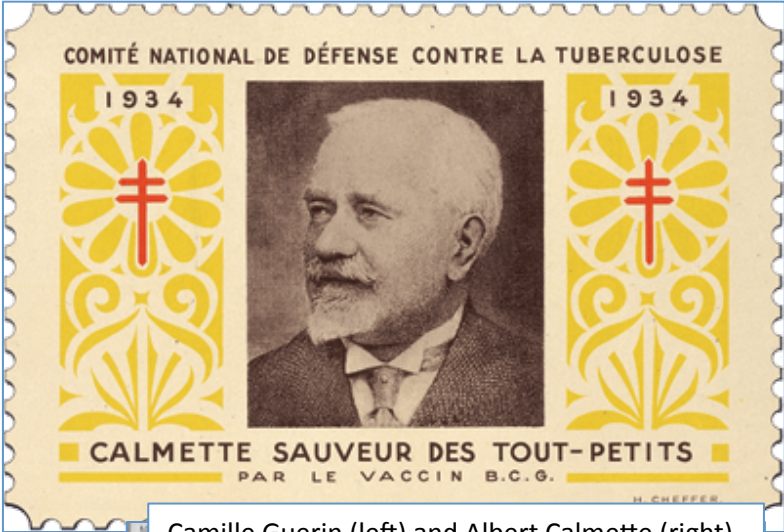

TB and Governments: Provincial Perspectives

- Recognizing that TB was primarily a disease of poverty and that private resources, voluntary efforts and local governments were inadequate to meet the costs of TB treatment, provincial governments assumed greater financial responsibility for management of the disease
- **1929** – Saskatchewan first to treat all TB patients without any charges to the individual, the costs met by taxation
- **1936** – Alberta was second to offer free TB treatment through the passing of The Tuberculosis Act
- **1939** – The Manitoba government assumed all costs of TB treatment (except for veterans and the indigenous population, who were under federal jurisdiction)
- **1945** – New Brunswick assumed full financial responsibility for TB maintenance costs in sanatoria; Nova Scotia followed suit in 1946



TB education, screening, surgery and rehabilitation, 1920s-40s

BCG: Vaccine Perspectives

- **1890** - The prospect of preventing TB through immunization was first considered with Tuberculin, but with little success
 - **1921** – Prospects for TB prevention were renewed with the first human use of “BCG vaccine”, named after Albert Calmette and Camille Guerin, based at the Pasteur Institute
 - Calmette was a student of Luis Pasteur and had developed a TB diagnostic test; Guerin was studying to be a veterinarian and had lost his father and wife to TB before focusing on working with Calmette on a vaccine after WWI
- 
- Camille Guerin (left) and Albert Calmette (right)
- 
- They discovered that successive cultures of a bovine tubercule bacteria strain weakened it enough that it could stimulate an immune response, but not cause illness
 - Important to success was vaccination prior to exposure to TB

BCG: Vaccine Perspectives

- BCG has remained controversial, although today it is the most widely used vaccine
- Its use, or non-use, has put into sharp relief how different countries have responded to TB, based as much upon the social perceptions and politics surrounding it as on its biology and the immunology of the vaccine
- **1924-28** – In France, some 114,000 infants vaccinated with BCG without serious complications; BCG taken up with enthusiasm in Spain and the Scandinavian countries
- Skepticism in the UK based on low confidence in Calmette & Guérin's original statistics, and doubts in the US about its safety when virulent TB bacilli was discovered in BCG supplied to the Trudeau Sanatorium

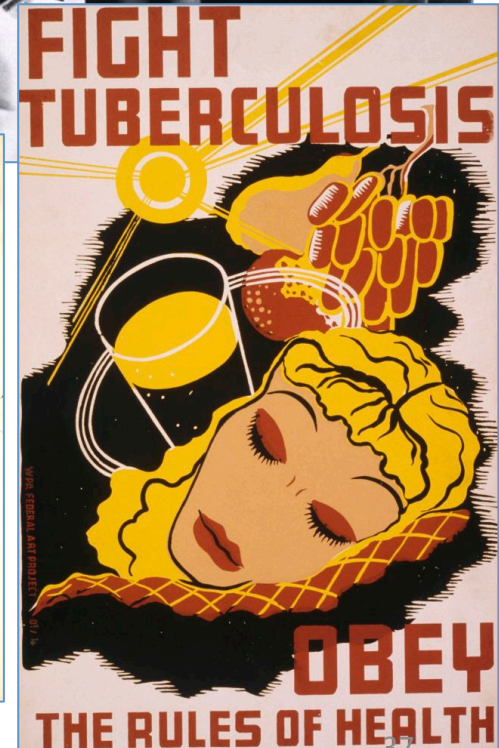
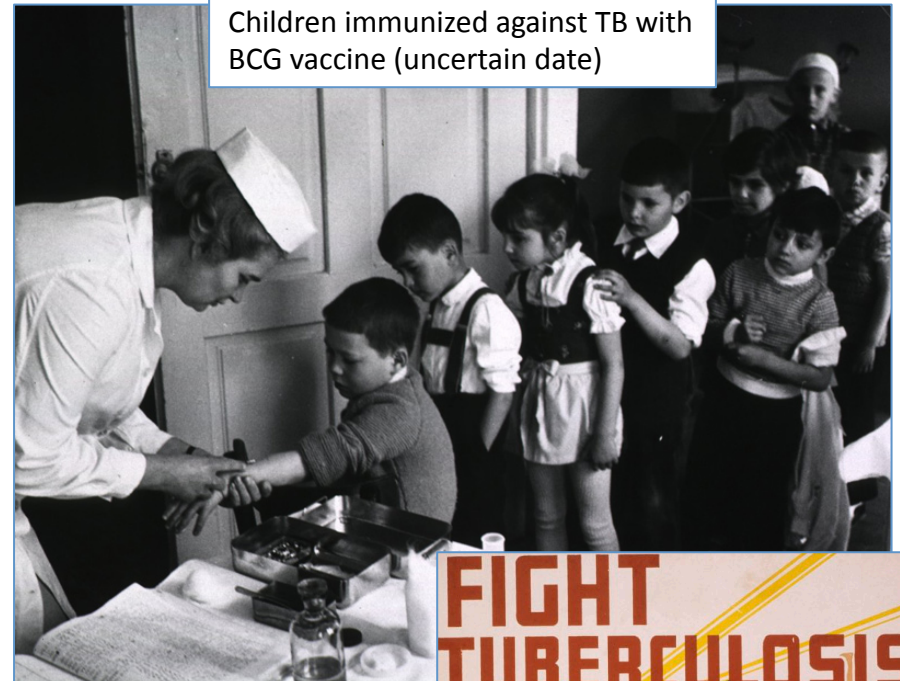
Packaging BCG vaccine, Pasteur Institute, Paris, 1931



- **1930** – Such doubts seemed confirmed after a BCG trial in Lubeck, Germany; there was an increase in TB incidence and 73 deaths among the 250 vaccinated; the vaccine was directly blamed
- Close examination, however, revealed contamination of the vaccine during production, yet among those already skeptical, the tragedy reinforced their concerns

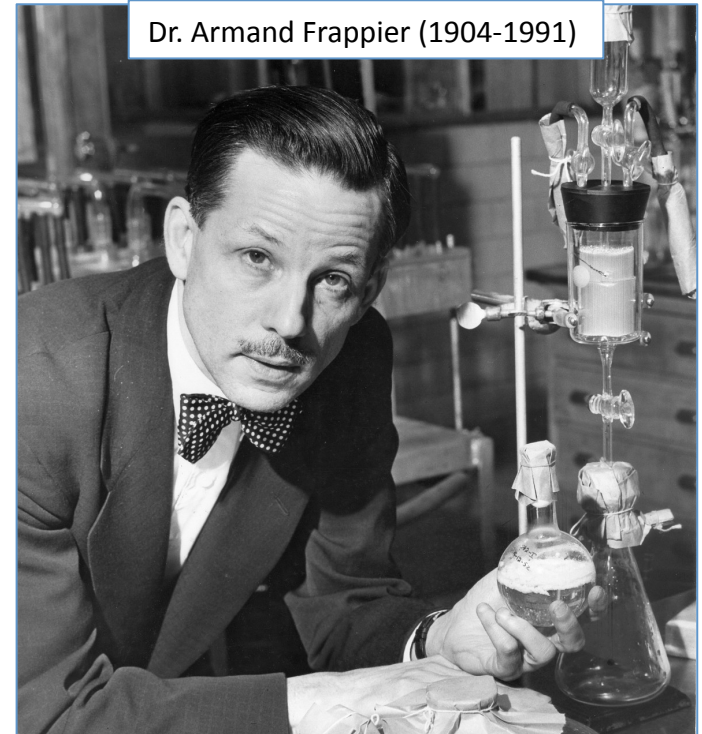
BCG: Vaccine Perspectives

- Concerns about BCG in the UK persisted until after WWII when pressing post-war needs for TB control undertaken by the National Health Service, coupled with greater confidence in the vaccine's effectiveness, led to its wide use by the 1950s
- However, in the US, BCG has been rarely used for many reasons, including a decentralized and private-oriented health "system" heavily invested in the sanatorium strategy of TB control, and increasing reliance on thoracic surgery and then antibiotics; prevention has thus remained much less of a priority



BCG: Vaccine Perspectives

- In Canada, more of a mixed approach to BCG
- **1925** – Close scientific connections between Quebec and France led to initial BCG studies involving infants that proved encouraging
- **1931-32** – Armand Frappier, driven by the death of his mother and brother of TB, dedicates himself to its defeat; he studies at Pasteur Institute and brought BCG vaccine strain samples to Montreal
- **1933** – Frappier asked by the National Research Council to study BCG
- In Quebec few sanatoria and the public campaign against TB was less well developed as in other provinces; thus there was more interest in TB immunization as a public health strategy

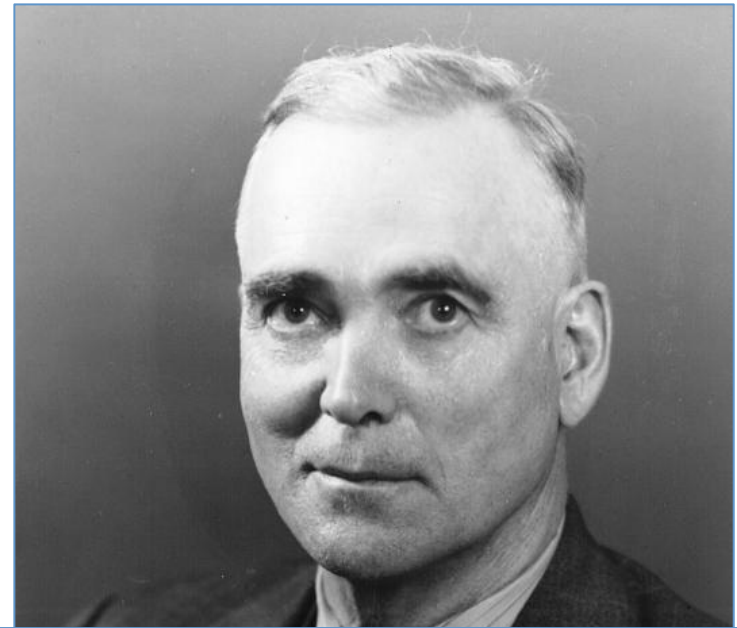


Dr. Armand Frappier (1904-1991)

- **1935** – Frappier helped establish a BCG clinic in Montreal designed to vaccinate newborn children of TB positive families
- BCG proved effective in stimulating TB immunity if infants were kept isolated until a tuberculin test became positive

BCG: Vaccine Perspectives

- **1928** – Meanwhile, the Canadian government funded research into BCG led by Dr. R. George Ferguson, Director of the Fort Qu'Appelle Sanatorium in Saskatchewan
- The sanatorium was literally surrounded by poverty-stricken Treaty-Four reserves, and like so many of this period, Ferguson saw what he termed a “primitive” people prone to TB who could only develop resistance through the long process of evolution to “civilization”
- The native population was not offered treatment in the sanatorium and until they caught up to the “white races”
- Ferguson hoped to prove that BCG could provide an opportunity to speed up this evolutionary process at very little cost, although the 1930 Lubeck tragedy gave him pause

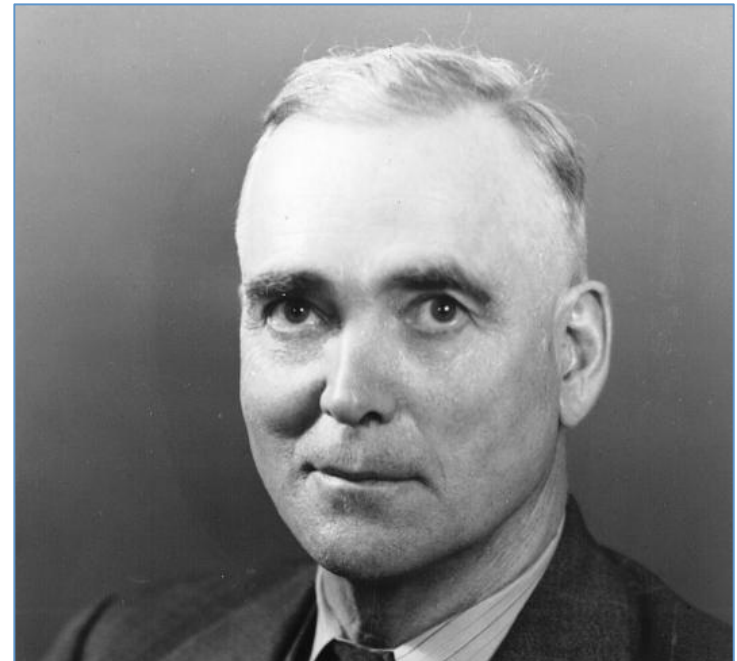


Dr. R. George Ferguson (1883-1964) headed the Fort Qu'Appelle Sanatorium for 31 years and was President of the Canadian Tuberculosis Association during 1935-36



BCG: Vaccine Perspectives

- **1933** – His confidence in the safety of BCG restored, and aware of Frappier's work in Quebec, Ferguson began a 12-year BCG trial involving Aboriginal infants
- The trial was funded by the Department of Indian Affairs and the National Research Council and was an apparent success: 6 of the children vaccinated developed TB with 2 deaths, while 29 of the 303 in the control group developed TB with 9 deaths
- However, the trial also found that 77 of the 609 native children in the trial died before their first birthday, but only 4 were due to TB; nearly 1/5 of the children died from other diseases
- While BCG lived up to its promise to control TB, poverty was the greatest threat to aboriginal children, but Ferguson showed little interest in preventing the socio-economic conditions underlying it



Built in 1936 near Fort Qu'Appelle Sanatorium, the Provincial Indian Hospital accommodated the aboriginal TB patients and infant children in the BCG experiment on the 3rd floor

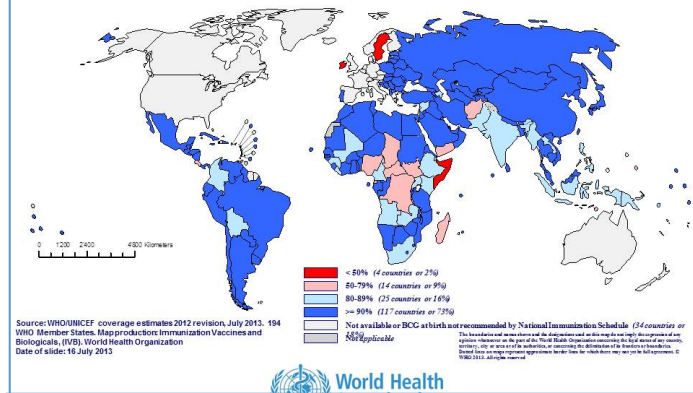


BCG: Vaccine Perspectives

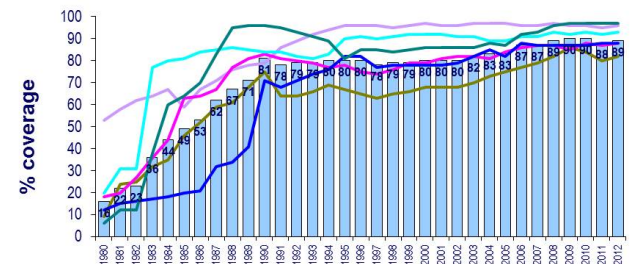
- **1938** – Frappier established the Institut de microbiologie et d'hygiène at the Université de Montréal, initially to produce BCG
- **1947** – Connaught Laboratories at the University of Toronto began BCG production, but by the 1950s most public BCG immunization programs in Canada ended; Connaught also produced Tuberculin and during the 1960s became a world leader in Tuberculin-PPD (purified protein derivative) production
- **1954** – Indian Health Services begin mass BCG vaccination for Indigenous communities until the 1960s
- Indigenous BCG vaccination continued in Alberta, Manitoba, NWT, Northern Ontario and Nunavut; in Saskatchewan and Quebec, it ended by 2011
- Globally, however, BCG immunization has increased markedly since the 1980s to control persistently high TB incidence

Map and graph from World Health Organization

Immunization coverage with BCG at birth, 2012



Global Immunization 1980-2012, BCG coverage at birth global coverage at 89% in 2012



TB and Governments: National Perspectives

- **1939-1950s** - TB control in Canada underwent a profound change, fuelled by the federal government assuming a major post-WWII role in providing funding, mostly on 50-50 shared basis with each province, to support TB services, most at no cost to patients
- **1948** – Federal Health Grants program launched, which included a dedicated Tuberculosis Control Grant to each province on a per-capita basis
- This growth in public funding took place in a context of sharply declining TB deaths and incidence among the general population, although the number of sanatoria in-patient treatment beds reached a peak of 19,000 in 1953, before falling sharply with the broadening use of antibiotics; by 1963 that number had been cut in half

TABLE V
TUBERCULOSIS DEATHS AND NOTIFICATIONS 1942 TO 1953—CANADA

Year	Deaths	Notifications	Ratio
1942	5,980	12,015	1-2.0
1943	6,168	12,520	1-2.0
1944	5,724	15,292	1-2.6
1945	5,546	14,328	1-2.5
1946	5,821	15,263	1-2.6
1947	5,449	13,739	1-2.5
1948	4,773	12,363	1-2.5
1949	4,295	13,097	1-3.0
1950	3,583	12,429	1-3.4
1951	3,417	11,152	1-3.2
1952	2,457	10,506	1-4.2
1953	1,810	10,545	1-5.8

TABLE I
FEDERAL TUBERCULOSIS CONTROL GRANT
Amounts Available, Expenditures and Percentages of Amounts Available Expended by Provinces, Fiscal Years 1948-49 to 1952-53 inclusive

	Amount Available	Expenditures	Percentage Expended
Canada	\$18,772,000	\$16,306,000	86.9
Newfoundland	824,000	681,000	82.6
Prince Edward Island	261,000	211,000	80.5
Nova Scotia	1,038,000	1,034,000	99.6
New Brunswick	847,000	770,000	90.9
Quebec	6,469,000	6,652,000	102.8
Ontario	4,515,000	3,186,000	70.6
Manitoba	1,108,000	642,000	57.9
Saskatchewan	1,030,000	928,000	90.1
Alberta	1,117,000	917,000	82.1
British Columbia	1,550,000	1,279,000	83.8

TABLE VI
ADMISSIONS TO SANATORIA IN CANADA 1944 TO 1953

Year	New Admissions	Re-admissions	Total	Re-admissions to Total Per Cent
1944	8,597	2,301	10,898	21.1
1945	9,293	2,474	11,764	21.0
1946	10,416	3,441	13,857	24.8
1947	9,518	3,627	13,145	27.6
1948	9,541	4,231	13,772	30.6
1949	10,146	4,272	14,418	29.6
1950	10,466	4,584	15,050	30.5
1951	10,346	4,553	14,899	30.5
1952	10,032	4,315	14,347	30.0
1953	11,134	4,379	15,513	28.2

Canadian Journal of Public Health (March 1955): 93-99

TB and Governments: National Perspectives

- By the 1930s, sanatoria in Canada had been largely transformed from the cottage-based plan into institutions modeled after modern hospitals, based on higher hygiene standards, more efficient management methods and increasing use of surgical procedures for treating TB
- **1940s-50s** - Provincial governments bore the primary cost of sanatoria treatment, but new post-war federal funds enabled the construction and equipping of new or expanded sanatoria facilities



West Coast Sanatorium, Corner Brook, NF, under construction, 1950s

TB and Governments: National Perspectives

- **1946-60** – However, the new and/or renovated sanatoria sponsored by the expanding health interests of the federal government were not open to an Indigenous population still enduring tuberculosis incidence on reserves at unprecedented levels; death rates of 700 per 100,000 were common during the 1930s-40s
- Characterizing the aboriginal population as “racially careless” concerning their own health, and their bodies a danger to the nation, the newly established Department of National Health’s Indian Health Service sponsored the establishment of 22 racially segregated “Indian Hospitals” by 1960



Charles Camsell Indian Hospital
Edmonton, Alberta.

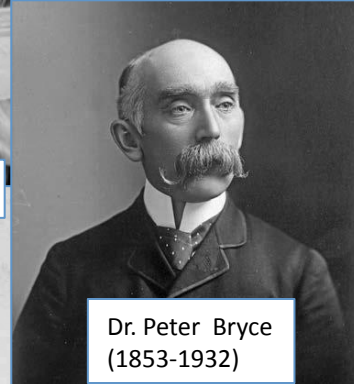
- **1946** - Charles Camsell Indian Hospital in Edmonton was originally built in 1913 as a Jesuit college and in 1944 converted into a military barracks decommissioned in 1945
- Many of the other Indian Hospitals were similarly converted from military barracks or renovated residential schools

TB and Governments: National Perspectives

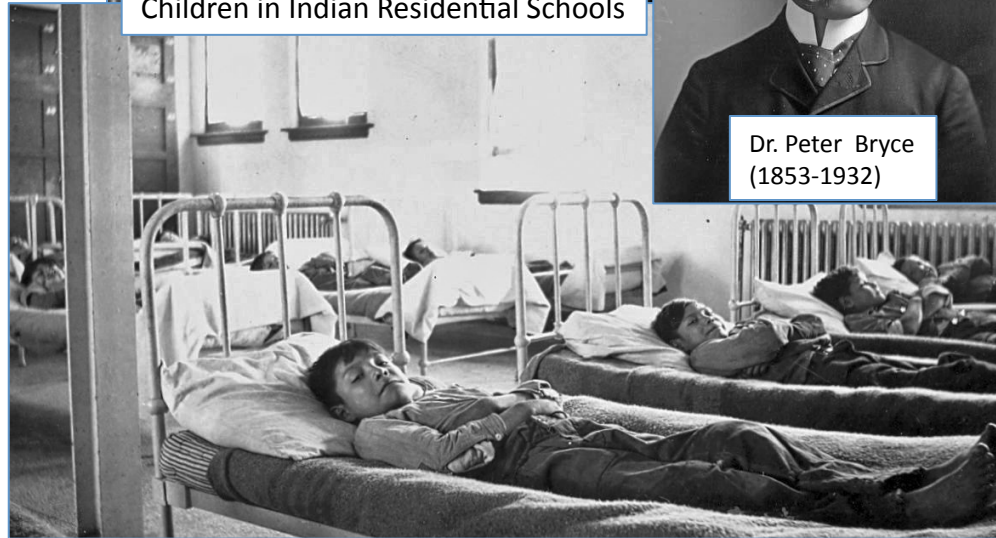
- During this period, TB death rates among children in residential schools were even higher, often as high as 8,000 deaths per 100,000 children
- **1946** – Indeed, the Indian Superintendent in the Fort Vermillion area northern Alberta stated: “If I were appointed by the Dominion Government for the express purpose of spreading tuberculosis, there is nothing finer in existence than the average Indian Residential School.”
- One wonders if that Indian Superintendent had heard about the work of Dr. Peter Bryce?



Children in Indian Residential Schools

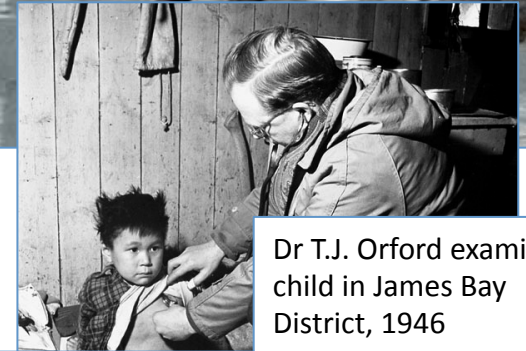
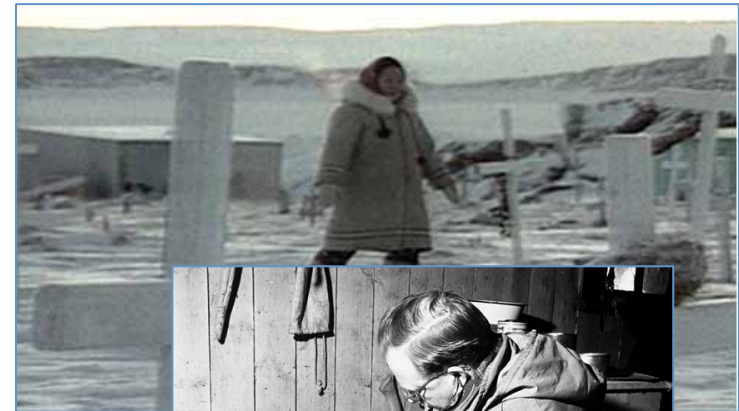


Dr. Peter Bryce
(1853-1932)



TB and Governments: National Perspectives

- **1950s-60s** – While TB was in sharp decline among the general population, attention focused on trying to contain it with Indian Hospitals, tuberculosis followed post-war development into the North and spread among highly susceptible Inuit communities
- During this period at least 1/3 of Inuit were infected with TB, prompting the Indian Health Service to transport thousands of people to southern hospitals and sanatoria for treatment
- **1950-69** – A special coast guard ship, the C.D. Howe (bottom), made summer trips to Inuit communities in the eastern Arctic
- Compounding the tragedy, once doctors decided who among the Inuit needed to go south, they were not allowed to go ashore to collect belongings or say goodbye to their families and friends, and some were never seen again



Dr T.J. Orford examines child in James Bay District, 1946



- **1956** – That year 1/7 of the entire Inuit population was being treated in southern Canada, each for an average of 2.5 years

TB and Governments: National Perspectives



Inuit children arrive at the Hamilton Sanatorium and many stayed for 2-3 years



Keeping busy would be a challenge, but many were innovative and creative while they recovered

- **1948-52** – The accelerated use of the recently discovered antibiotics, such as Streptomycin, resulted in the 700-bed facility in Hamilton Mountain Sanatorium increasingly redundant
 - Patients from Eastern Arctic went to Hamilton; those from Western Arctic went to Edmonton; More than 1,200 Inuit received TB treatment in Hamilton, particularly use of the new antibiotics
 - More Inuit TB patients were sent to Hamilton's Sanatorium than to anywhere else, and it became home to the largest year-round community of Inuit anywhere in the country
- The Arctic evacuation split families, sometimes for years; some died and were buried without their families knowledge

TB's Legacies...

Rediscovering Peter Bryce

- Much happened in the Canadian tuberculosis story following Peter Bryce's forced retirement in 1921 and his death in 1932, but in terms of TB's impact on the Indigenous population, very little did...



<https://fncaringsociety.com/peter-bryce>

THE STORY
OF
A NATIONAL CRIME
BY
P. H. BRYCE, M.A., M.D.
BEING
AN APPEAL FOR JUSTICE
TO THE
INDIANS OF CANADA

The Wards of the Nation :
Our Allies in the Revolutionary War :
Our Brothers-in-Arms in the Great War.

PRICE, 35 CENTS

Published by James Hope & Sons, Limited

OTTAWA, CANADA

1922

Full text at: <https://archive.org/details/storyofnationalc00brycuoft>

TB's Legacies...

Rediscovering Peter Bryce

- **1990s-2000s** - It would be the work of several historians, coupled with a growing public recognition of the broader injustice against Canada's Indigenous population, that would lead to the rediscovery of Bryce's critical work



<https://fncaringsociety.com/peter-bryce>

Crusading for the Forgotten: Dr. Peter Bryce, Public Health, and Prairie Native Residential Schools*

MEGAN SPROULE-JONES

Abstract. This article examines the rise of the public health movement and its impact on native affairs in Canada at the turn of the century. It focuses on the efforts of Peter Bryce, Chief Medical Officer for the Departments of the Interior and Indian Affairs, to improve conditions in native schools and on reserves. In 1907, Bryce released his controversial *Report on the Indian Schools of Manitoba and the North West Territories*, revealing that 24 percent of all native residential school students had died of tuberculosis. Believing firmly that the state was responsible for promoting the health and welfare of its people, Bryce insisted that the federal government address this high death rate. His tireless crusade on behalf of the native population demonstrated the extent to which native affairs were influenced by the broader social, political, and economic agendas of the day, and anticipated the federal government's changing role in social services following World War I.

Résumé. Cette étude examine l'essor du mouvement pour la santé publique et son impact sur les affaires autochtones au Canada au début du XX^e siècle. Elle se concentre sur les efforts de Peter Bryce, «Chief Medical Officer» des départements de l'intérieur et des affaires indiennes, pour améliorer les conditions sanitaires des écoles et des réserves autochtones. En 1907, Bryce publia un rapport controversé, intitulé *Report on the Indian Schools of Manitoba and the North West Territories*, qui révéla que la mortalité des élèves autochtones par tuberculose avait été de 24 pour cent. Convaincu que l'État était responsable de promouvoir la santé et le bien-être de sa population, Bryce exigea que le gouvernement fédéral s'occupe de cette mortalité élevée. Sa croisade infatigable au nom de la population autochtone démontre à quel point les affaires autochtones furent influencées par les projets sociaux, politiques, et économiques du

Megan Sproule-Jones, 402-235 Bay Street, Ottawa, Ontario K1R 5Z2.

CBMH/BCHM / Volume 13: 1996 / p. 199-224

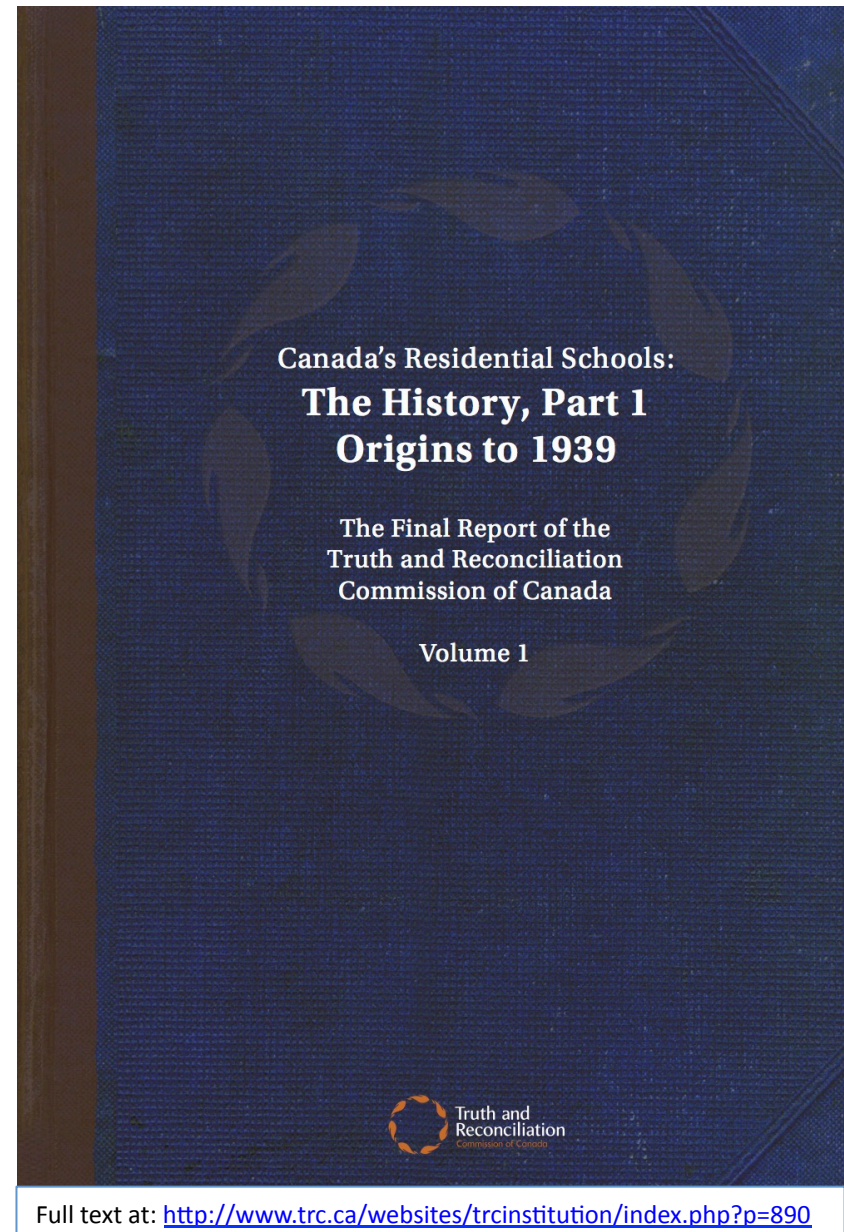
Canadian Bulletin of Medical History;

<https://www.utpjournals.press/doi/abs/10.3138/cbmh.13.2.199>

TB's Legacies...

Resurrecting Peter Bryce

- **2008-15** – Bryce's reports, and historical scholarship about it, would resonate with greater power and prove critical to the work of the Truth and Reconciliation Commission of Canada
- **2011** – “P.H. Bryce Award” established by First Nations Child & Family Caring Society of Canada and the Canadian Pediatric Society; recognizes people working in public health who advocate for changes to improve safety, health or well-being of Inuit, Métis & First Nations children & youth
- **2011** – Andy Jay Bryce discovered documents about his great-grandfather in a family inheritance; prompts a personal research project that leads to his “Finding Peter Bryce” documentary film



TB's Legacies...

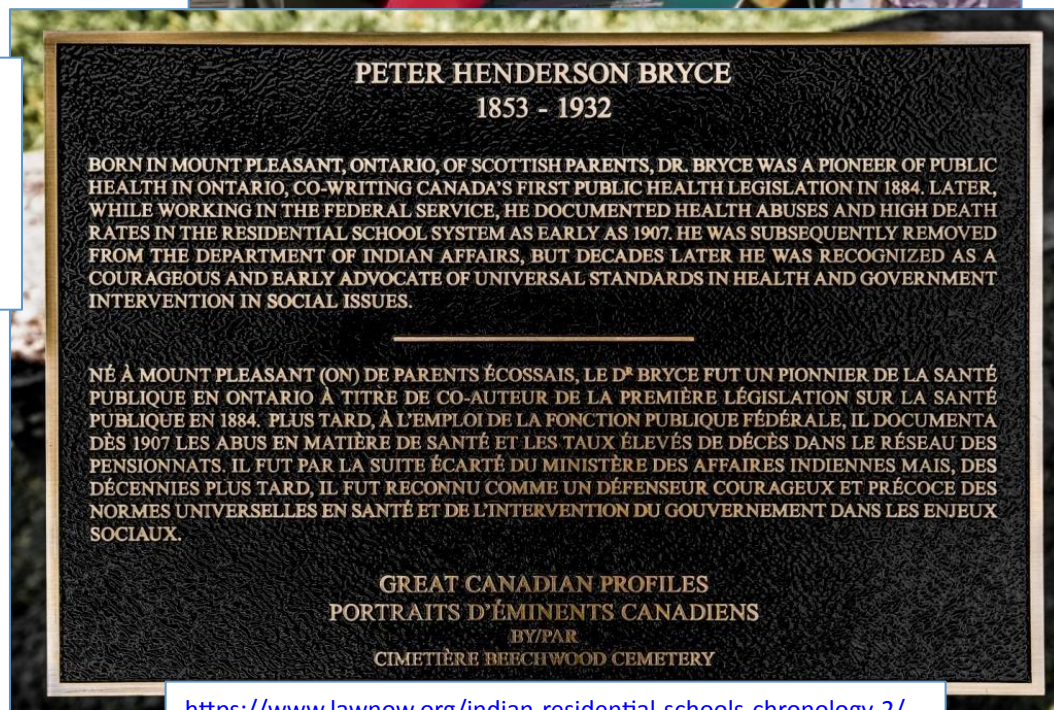
Recognizing Peter Bryce

- **March 2015** – Peter Bryce was recognized in the name of the “Waakebiness-Bryce Institute for Indigenous Health” at Dalla Lana School of Public Health



https://www.youtube.com/watch?v=V1NQ_tgR_oA

- **August 2015** – Plaque honoring Peter Bryce unveiled at his Ottawa gravesite during a special ceremony to honour his courage

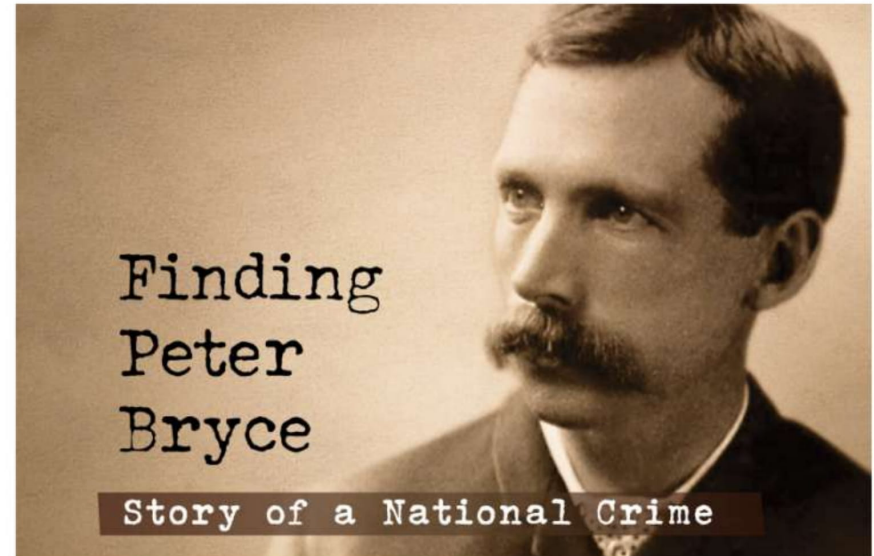


<https://www.lawnow.org/indian-residential-schools-chronology-2/>

TB's Legacies...

Recognizing Peter Bryce

- **May 10, 2018** – “Finding Peter Bryce” documentary premiered in Ottawa
- **Sept. 2018** – “Finding Peter Bryce” documentary available for private and public showings, via:
https://www.movingimages.ca/store/products.php?finding_peter_bryce



FINDING PETER BRYCE

PREMIERE SCREENING

Thursday, May 10th,

Doors Open 6:00, Program Starts at 6:30

The Mayfair Theatre, 1074 Bank St, Ottawa

Directed by Peter Campbell

Produced by Andy Bryce & Peter Campbell

<http://andyjaybryce.com>

Thank You

This presentation has been assembled from a wide variety of primary and secondary sources and images gathered through many web searches and other research.

Rather than provide specific references in the presentation, I can certainly provide them on request.
Email me at:

Christopher Ruty [hhrrs@healthheritageresearch.com](mailto:hhrs@healthheritageresearch.com)

Tuberculosis in Canada: Some Historical Perspectives

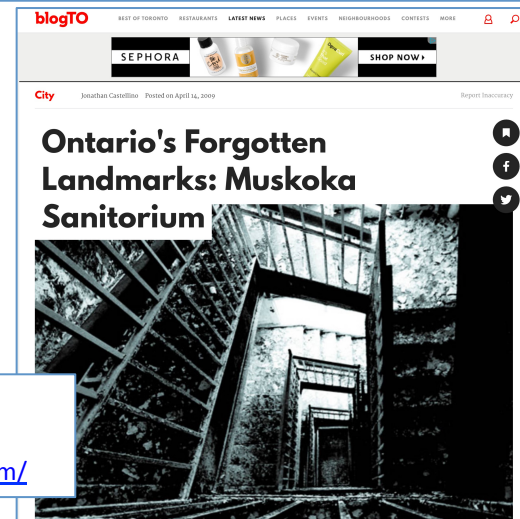
Were Learning Objectives Met?

Objectives:

- Provide historical context to the distinctive tuberculosis experience in Canada
- Trace development of sanatoria, provincial and federal TB treatment programs, the Canadian experience with BCG vaccine, and the impact of TB on the Indigenous population
- Special focus on the work of Dr. Peter Bryce in exposing the toll of TB in residential schools in the 1900s-1920s period, how that work was received and then essentially ignored by Canadian governments
- How the federal government set up separate Indian Hospitals after World War II and how TB spread into the North, prompting the forced removal of Inuit TB patients to sanatoria in Hamilton & Edmonton
- Highlight the rediscovery and resurrection of Peter Bryce in the context of the Truth and Reconciliation Commission's Report on Residential Schools.



Memorial for the Inuit patients who died of tuberculosis at the Hamilton Sanatorium



Blog the abandoned Muskoka Sanatorium,
[https://www.blogto.com/city/2009/04/
ontarios_forgotten_landmarks_muskoka_sanatorium/](https://www.blogto.com/city/2009/04/ontarios_forgotten_landmarks_muskoka_sanatorium/)