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An Author's Delusion in Victorian Canada: Richard Maurice Bucke and Transnational Publishing of Popular Science

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Abstract: *We know little about the transnational publishing experience of authors of books about scientific topics in Canada. This study therefore explores the nineteenth-century publication of a Canadian author's manuscript in the United States and Great Britain:* Man's Moral Nature *(1879) by Ontario physician Richard Maurice Bucke. Although this book is relatively unknown, Bucke's personal records about this, his first book, provide insights into publishing processes, from finding a publisher through to understanding book production and copyright. As the book's reception shows, Bucke not only was unable to position his scientifically-oriented book for his intended general readership but he also received criticism from medical colleagues for his attempt. Bucke's emphasis on obtaining a North American readership, however, adds further evidence of a continental market described by book history scholars.*

Résumé : *Au Canada, nous savons très peu de l'expérience en matière de publication transnationale des auteurs de livres traitant de sujets scientifiques. Cette étude examine la publication aux États-Unis et en Grande Bretagne du manuscrit d'un auteur canadien au dix-neuvième siècle:* Man's Moral Nature *[La nature morale de l'homme] par le docteur ontarien Richard Maurice Bucke. Ouvrage relativement inconnu, ses papiers personnels élucident les démarches à suivre et les procédés entourant la publication d'un livre à l'époque allant de la recherche d'un éditeur jusqu'à la manière dont l'auteur comprend les processus de production et les droits d'auteur. Comme le montre l'examen de la réception qu'a connue le livre, Bucke n'a pas réussi à faire en sorte que son ouvrage scientifiquement orienté soit susceptible d'intéresser le grand public comme il le souhaitait, mais en plus, il s'est attiré les critiques de ses collègues médecins pour avoir tenté de le faire. L'importance que Bucke attache à toucher des lecteurs dans l'Amérique tout entière fournit cependant un exemple supplémentaire de l'existence d'un marché nord-américain tel que décrit par les chercheurs dans le domaine de l'histoire du livre.*

Keywords: R.M. Bucke; authorship; publishing; book history; popular science

WHEN DR. RICHARD MAURICE BUCKE of London, Ontario (1837-1902) decided to write a book about the intellect and emotions, he struggled to find a publisher, especially one that would agree to publish for markets in both North America and the British empire, including Canada. Without any knowledge of publishing processes, Bucke maintained that he had written a book which would appeal to such a wide readership it would be a commercial success for him and his publisher. With support of his own funds, his book was published in 1879 mainly in New York as *Man's Moral Nature*. However, as publishers had predicted, it did not sell and widely met a lukewarm—often critical—reception.

Although this was Bucke's first book, he was well known both as a specialist in mental illness and as a confidant of American poet Walt Whitman. Bucke's international reputation was derived in large part from his publications, for his

 Jennifer J. Connor, "An Author's Delusion in Victorian Canada: Richard Maurice Bucke and Transnational Publishing of Popular Science," *Scientia Canadensis* 43, no. 1 (2021): 1-28.

full-time work as a physician and superintendent of a large asylum did not stop him from writing extensively on his medical specialty and on subjects related to Whitman and transcendentalism: his lifetime publication output included about 110 articles, essays, letters, and reports, and nine books—six of them his edited works of Whitman with some in multi-volumes and editions.[1] Indeed, Bucke is still recognized for his books, *Cosmic Consciousness* (Philadelphia, 1901) [**Fig. 1**] and the first biography of Walt Whitman (Philadelphia, 1883). Affinity with Whitman and the poet's alignment with transcendentalism is clear from Bucke's own books: often grounded in intellectual arguments of the day, they essentially linked scientific with spiritual, or mystical, belief. Bucke's aim was to assist non-specialist readers in understanding complex, less visible, interactions between science and humanity, and his first attempt to publish a book along these lines was in 1879 with *Man's Moral Nature*. He wrote this book with a general reader in mind, for somewhat contradictory reasons: he wished to announce an important discovery that affected everyone, that everyone might read, but that only experts would understand; to transplant his ideas into better minds than his for further contemplation; and even (rather boldly) to aid in marketing Walt Whitman's book, *Leaves of Grass*.

In this way, from a modern scholarly perspective, *Man's Moral Nature* represents popular science. Since the 1980s, however, Bucke and his work seem to have garnered little scholarly interest after wide attention before then among literary scholars and historians for his relationship with Whitman, his career, and his place in the history of psychiatry. Bucke's publications were therefore typically employed by these scholars as primary material for analysis of their content.[2] With the exception of brief discussion by Bucke's leading biographer, S.E.D. Shortt, about the publication process and lack of sales of *Man's Moral Nature* from Bucke's letters,[3] Bucke's book publishing experience has yet to be examined to increase our knowledge of authors in Victorian Canada who contributed to the popular literature of science outside the country. Significantly, several of Bucke's letters and personal records unusually describe the publication and production of *Man's Moral Nature* in New York, with two publishers in Toronto and London, England as co-publishers and distributors over the course of two years. Some of the letters about Bucke's publication process, fortunately, are included in archival collections as typed transcriptions from now-lost originals in another correspondent's papers. There are few of any such records for scientific authors in Canada. A notable contemporary exception is the correspondence of John William Dawson. A highly regarded scientist with an extensive publication record, as Susan Sheets-Pyenson has discussed, Dawson toyed with the popularization of science before turning it into a full-blown mission.[4] His unique publishing experience calls for separate analysis.[5] Otherwise, most evidence of scientific authors' activity with manuscripts intended for broad readership remains drawn from their books themselves, the context of their publishers, and the context of their scientific fields.[6]

This study therefore explores Bucke's publishing experience against the background of recent studies of scientific authorship, book history, and trans-

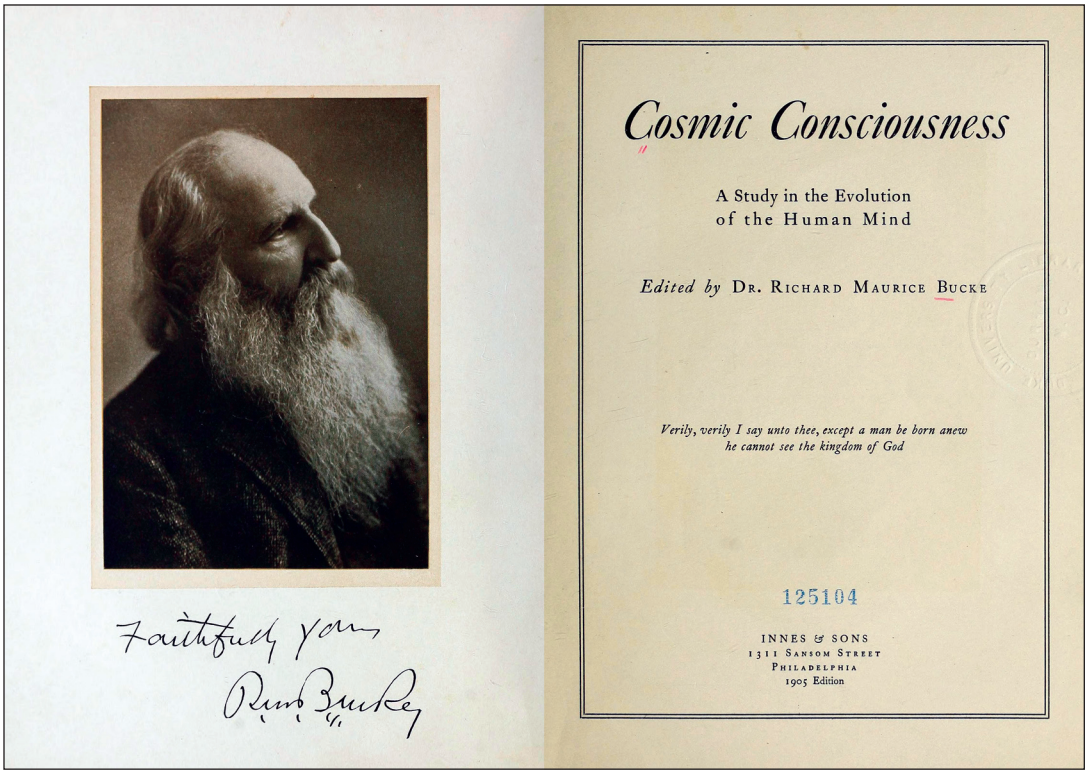


Figure 1. *Richard Maurice Bucke, and title page of* Cosmic Consciousness. *Source: Internet Archive, Duke University Libraries.*

national history to suggest that it reflected the essence of the contemporary approach to writing popular science and Canadian trends in transnational publishing at the time. Though sparse, Bucke's letters and records on the commercial process from authorship through publishers highlight in particular the transnational nature of Canadian book publishing in science from this period. As his experience indicates, he followed a trend in aiming his popular science work in the first instance for a North American readership. At the same time, however, to cover all contingencies in a period when copyright acts for Canada were both national and imperial for books published in Great Britain, he wished to have simultaneous publication in England as well as Canada. Bucke's letters also reveal his naivete about publishers and their decision making, timelines, production details, and marketing. Analysis of the reception of Bucke's book among his intended general readers, and among his medical colleagues, reveals how the book failed to have the impact projected by the inexperienced author. Ultimately, as this study shows, *Man's Moral Nature* was both a commercial and scholarly failure.

Studies of Scientific Authorship and Publishing about Canadian Science

Studies of scientific authorship have tended to separate the activity from the seventeenth century to the present into two linear kinds: scientists writing for peers as part of the scientific endeavour, primarily in scientific journals;[7] or scientists writing for general readers, often in books.[8] Increasingly, however, historians

address both kinds of scientific writing and publishing in recognition of the often symbiotic ways in which "knowledge and the sciences have been handed on from generation to generation and from place to place."[9] As well, for the Victorian period, they note that scientists, writers, and science popularizers evolved as distinct occupational activities; that the dissemination of science through the extensive periodical press at the time encouraged active interplay between average readers and science; and that books about science became influential and integral to Victorian culture at all walks of life.[10]

Studies of scientific publishing have also tended to present the publication process linearly, with periodicals and books moving outward from a metropolitan "centre" to a rural "periphery" of scientific community and general readers alike. However, over the past two decades far more nuanced historiography has examined "geographies," "shifting centres," the broader "European periphery," and "networks."[11] Scientific knowledge has spread out in geographic circles from the original metropolitan place and provincial places of the same nation-state to an urban base of publishing and its knowledge producers around the globe. Scientific knowledge has also encompassed centres and margins within science itself. And, it has included centres and peripheries in its communication, creating a "double periphery," between science and popular science in particular;[12] as Jonathan Topham explained in this context, although "periphery" is often conceived as geographical, it has connotations as well of "distance from a central zone in which authority is invested."[13]

Just as the focus on place moved from "center-periphery models" to "multimodal networks of interactions between sites" in histories of science, according to Michael Worboys,[14] so too have studies of formal scientific literature exchanges shown the ebb and flow of publications through space and time, through shared sites of distribution after readers' initial acquisition of books from publishers and retailers.[15] General book history studies have also recently revealed that publications circulated in ways independent of commercial networks established by metropolitan printers, publishers, and booksellers.[16] In related fields of historical enquiry, this focus on circulation, movement, and exchange in global processes that are not contained within nations is known as transnationalism.[17]

It is against this historiographical background that scientific publications about Canada and by Canadian authors need to be considered. In addition, book history studies of scientific publishing provide an overview of the Canadian context. Although scientific publications in the colonial period were published outside Canada, and generally not written by residents, by the nineteenth century, Canadians began to conduct scientific studies and publish many journals in newly established scientific and technical specialties.[18] Thousands of scientific authors published articles in Canadian journals, and Canadian journals of medicine relied on relationships with local publishers.[19] The publication of books about science, however, continued to occur outside Canada. A database of publications in science and technology to 1914, compiled thirty years ago, identified over 58,000 items, about 10 per cent (5,700) of which were books and pamphlets.[20]

While anonymous authorship accounted for about 40 per cent of these database items,[21] books always identified an author. Analysis by Bertrum H. MacDonald of 3,200 scientific books and pamphlets using pre-1901 Canadian publications microfilmed to that point by the Canadian Institute for Historical Reproductions (now *Early Canadiana Online*) reveals that the majority of authors wrote only one. About 43 per cent of all the scientific books and pamphlets were published outside the country, with London, England and New York being the two most popular places: London ranked second after Montreal, and New York ranked sixth in the entire list of locations. These two cities retained these ranks through to 1914, according to MacDonald's later sample of 5,700 books and pamphlets.[22]

Richard Maurice Bucke reflected the approach to writing popular science discussed most recently by historians of science and represented contemporary Canadian trends in transnational publishing, as he eagerly sought publication of a book on a scientific topic within North America for the continental readership and his network of professional colleagues while ensuring it had copyright protection in Canada. His book, *Man's Moral Nature*, was published in New York, with simultaneous publishing and distribution of some copies in Toronto and London, England. This was an ambitious goal and significant accomplishment for a Canadian resident, especially one who had a full-time practice in medicine and administration. Underlying all his extraordinary efforts to get it published, as Bucke himself mused, rested an author's delusion that his book would sell so many thousands of copies that it would be a commercial hit.

R.M. Bucke and His Publishers

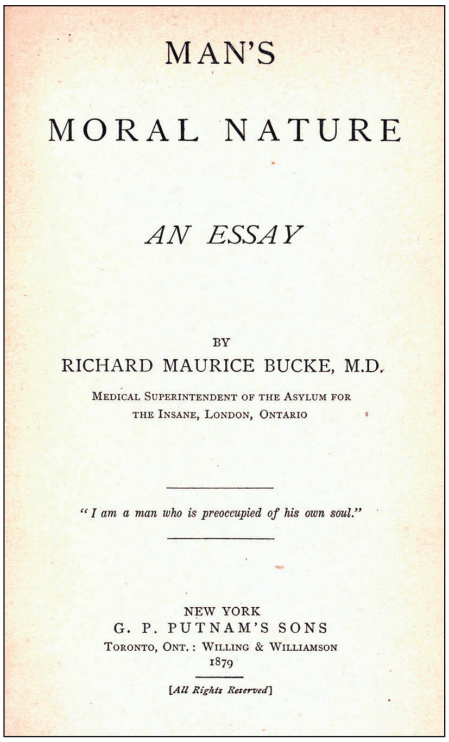
Richard Maurice Bucke's father, an Anglican minister, had moved his family to Upper Canada (now Ontario) from England when Bucke was a year old. Contemporary biographical notices for Bucke (likely submitted by him) highlight his illustrious family connections, who included a former Prime Minister and Charles Bucke, a great uncle who had published books through Harper and Brothers in New York that were long in print. They also indicate that he attended grammar school in London (Ontario), though later biographies emphasized study with his father and in his father's large library. At age 16, Bucke travelled to Nevada as a prospector before returning to Canada in 1858 to train in medicine at McGill College in Montreal. As was customary at the time, he then pursued further medical studies abroad, in England and France, before practising medicine in Sarnia from 1865. Appointed for one year in 1876 as superintendent of the asylum in Hamilton, Bucke then moved to London, Ontario to become superintendent of one of North America's largest asylums for the mentally ill. In 1882 he was appointed the first professor of nervous and mental diseases at the new medical school of Western University in London, following which he was a charter member of the Royal Society of Canada; president of the psychological section of the British Medical Association; and president of the American Medico-Psychological Association (forerunner to the American Psychiatric Association).[23] From the time of his asylum position in a small community in southwestern Ontario, Bucke thus developed an international career and reputation.

A few years before taking up the career of asylum superintendent that would last for the next quarter century, Bucke acquired his lifelong interest in poetry, especially the poetry of Walt Whitman. In 1872, after an evening of reading poetry with friends, Bucke had an intensely felt religious experience, lasting only seconds, in which he exulted through physical and intellectual flashes of internal light and fire that a living presence governed the universe, that the soul was immortal, that everyone was guaranteed happiness, and that the foundation for all was love. (Such an experience would become recognized later as a mystical illumination.) His regular employment as superintendent afforded him the security to write. To capture his evanescent experience, he decided to write a book that, in 1879, was published primarily in New York by G.P. Putnam's Sons as *Man's Moral Nature: An Essay*: according to Shortt, "as the first Canadian monograph on neuropsychiatry it remains a literary landmark."[24] [**Fig. 2**] In it, Bucke attempted to simplify a complex view of the intellect and emotions for a general readership, a task that he (perhaps understandably) found "a perfect nightmare" to write.[25] He maintained that intellectual nature derived from the cerebrospinal nervous system, the moral nature from the sympathetic nervous system. [**Fig. 3**] His book of 200 pages consisted of six chapters on the moral nature: its limits, its physical basis, its historical development, whether it was a fixed quantity, and the inference drawn from this development about the essential fact of the universe. Bucke ended his book on a high note of optimism: "This, then, is the end, the conclusion of the whole matter: Love all things—not because it is your duty to do so, but because all things are worthy of your love. Hate nothing. Fear nothing. Have absolute faith. Whoso will do this is wise; he is more than wise—he is happy."[26] In Shortt's view, this transcendent note foreshadowed the thesis of Bucke's later work, *Cosmic Consciousness*.[27]

As Shortt explained, both the vocabulary and the neurological issues that Bucke explored to make this conclusion already formed part of medical thought in the 1870s, and the task of describing mental physiology was so difficult that Bucke initially wrote a series of articles for medical readers. The response to his articles strengthened his intent to write a book-length study.[28] Yet, Bucke told his lifelong friend, Harry Buxton Forman—the English critic, editor, and acquisition agent of books for Bucke's library[29]—"I want the book published in a popular manner":[30]

> It ought to be some such a book to the public as Richardson's 'Diseases of Modern Life' though scarcely so scientific and more popular. It will be a book for everyone to read but only thinkers and men with a spice of science about them will fully understand it, but the bulk of the book and the most essential ideas in it can be taken in by any thoughtful person.

When the book was published, Bucke explained in a preliminary section that "[t]he Author cannot therefore claim that he writes the book to make the world wiser. He certainly does not write it for money or fame, neither does he look for either as his reward." His aim was rather to transplant some of the problems into better minds: "this would be compensation indeed," he wrote, "not for writing



MAN'S

MORAL NATURE

AN ESSAY

BY

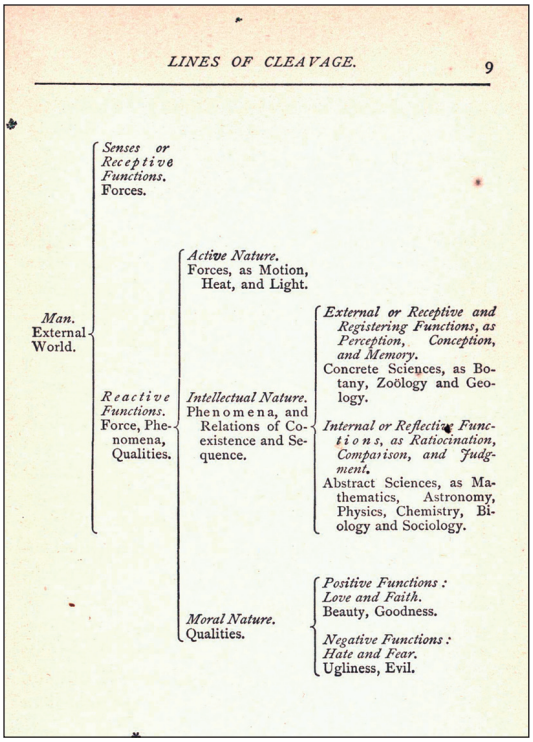
RICHARD MAURICE BUCKE, M.D.

MEDICAL SUPERINTENDENT OF THE ASYLUM FOR THE INSANE, LONDON, ONTARIO

"I am a man who is preoccupied of his own soul."

NEW YORK
G. P. PUTNAM'S SONS
TORONTO, ONT.: WILLING & WILLIAMSON
1879

Figure 2. *Title page, Canadian edition of* Man's Moral Nature. *Source: Internet Archive, CIHM 00324, Canadiana.org, in University of Alberta Libraries.*



LINES OF CLEAVAGE. 9

Man. External World.

Senses or Receptive Functions. Forces.

Reactive Functions. Force, Phenomena, Qualities.

Active Nature. Forces, as Motion, Heat, and Light.

Intellectual Nature. Phenomena, and Relations of Co-existence and Sequence.

External or Receptive and Registering Functions, as Perception, Conception, and Memory. Concrete Sciences, as Botany, Zoölogy and Geology.

Internal or Reflective Functions, as Ratiocination, Comparison, and Judgment. Abstract Sciences, as Mathematics, Astronomy, Physics, Chemistry, Biology and Sociology.

Moral Nature. Qualities.

Positive Functions: Love and Faith. Beauty, Goodness.

Negative Functions: Hate and Fear. Ugliness, Evil.

Figure 3. *Schematic diagram,* Man's Moral Nature, *9. Source: Internet Archive, CIHM 00324, Canadiana.org, in University of Alberta Libraries.*

the book, which was not a labor and needed no compensation, but for the years of mental travail that these problems have imposed upon him."[31] Bucke also dedicated *Man's Moral Nature* to Walt Whitman, who had inspired the book. Both Bucke and Forman would eventually act as literary executors for Whitman's work, and after Whitman's death, together they published many edited volumes of his writings. [**Fig. 4**]

In just over a dozen letters to Forman between October 1878 and August 1879, Bucke traced the path of his book manuscript through the publication process.[32] On October 27, Bucke hoped to finish his book in the winter; more than this, he expected that if it were read it would "assist in making a market for [Whitman's] 'Leaves of Grass'" (although his book itself alluded only incidentally to Whitman and his works). Based on reaction in Tennessee to one of Bucke's essays ("quite a furor"), he inferred that his book would cause a "GOOD DEAL" of excitement. He proposed to go to London, England to find a publisher with an office in New York in order to have his book published in both countries simultaneously and asked Forman for advice: "MacMillans would suit me if they have a N.Y. house. Smith & Elder are too much in the novel business. Williams & Norgate and Trubner are too scientific." He dismissed the possibility of Williams & Norgate, publisher of scientific books by Thomas Huxley and Herbert Spencer, along with the *Natural History Review*. Trübner and Co. was an English purchasing agent for

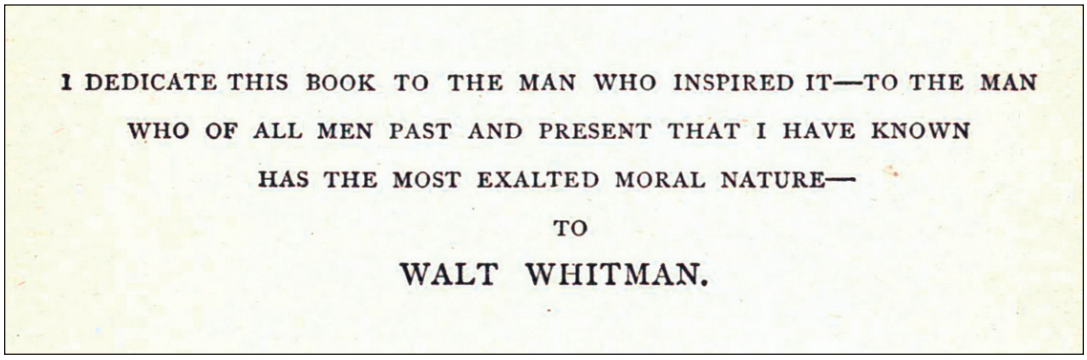

I DEDICATE THIS BOOK TO THE MAN WHO INSPIRED IT—TO THE MAN
WHO OF ALL MEN PAST AND PRESENT THAT I HAVE KNOWN
HAS THE MOST EXALTED MORAL NATURE—
TO
WALT WHITMAN.

Figure 4. *R.M. Bucke's dedication to Walt Whitman,* Man's Moral Nature*, [v]. Source: Internet Archive, CIHM 00324, Canadiana.org, in University of Alberta Libraries.*

the American Surgeon-General's library in the 1870s and may have been familiar to Bucke in that capacity, although by "scientific" Bucke might have meant "scholarly," a term that more aptly described Trübner and his firm.[33] Regardless, at this stage, he clearly wished to position his book for a broad, general readership.

On November 10, Bucke hoped to have his book published by the end of the month. This optimistic date for publication — within two weeks— suggests that "published" for him meant "ready to submit for publication"; indeed, he did meet his own deadline on November 27 by finishing his manuscript, which was "copied out and verified." Only then did Bucke ask for a leave of absence from the asylum to travel to New York to arrange for its publishing. He evidently recognized the importance of New York as the home for many publishers, but his thinking might also have been influenced by the fact that his great uncle's books, *On the Beauties, Harmonies, and Sublimities of Nature* and the two-volume *Ruins of Ancient Cities* had been published in succeeding editions by Harper and Brothers in New York from the 1840s. Nevertheless, a month later, Bucke told Forman about his frustrating trip: the reaction of Appleton & Co., that they "did not want the MSS at any price, would not publish it, would not look at it" was repeated at Scribner & Co., Henry Holt and Company, and the agent's office for Macmillan and Co. "Then," Bucke said, "I began to get mad."

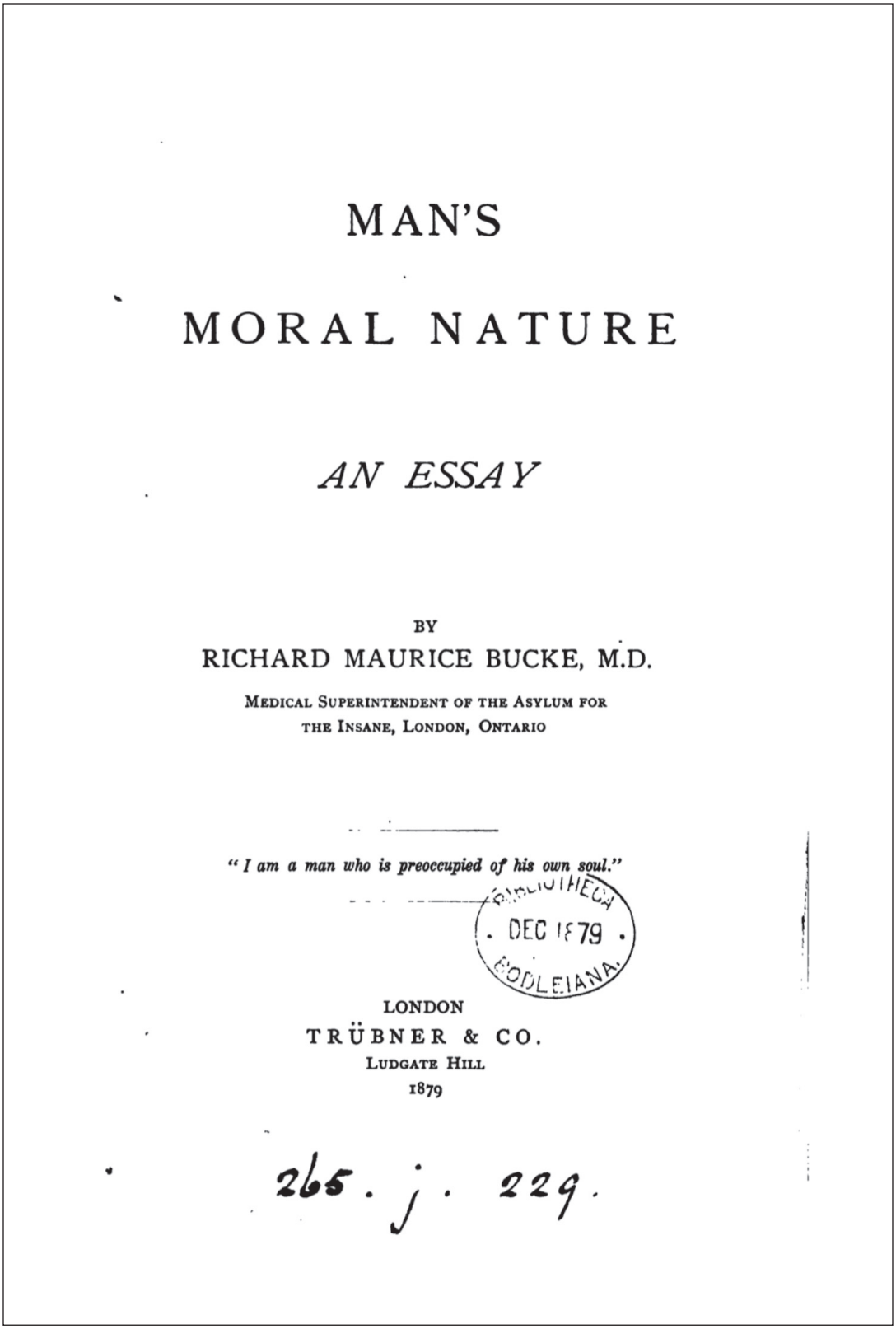
> However, before damning the whole race of publishers I made one more trial, viz. Putnam & Co. Saw Putnam himself had quite a talk with him. He promised to have the MSS read and to read it himself, so I left it with him and expect to hear in a couple of weeks what he proposes to do about it.[34]

Putnam must have responded favourably, for on February 26, 1879 Bucke wrote that his book was passing through the press with a possible publication date of April. "I did think it would be out in March," he observed, "but it is a slower job than I expected":

> About a third of this book is in type. I am correcting the proof and one of my [asylum] attendants who was a printer in England is helping me to proof read. He is a splendid fellow for punctuation and minute errors in grammars [*sic*] and such little matters. I expect between us we shall get the book about perfect by the time we print.

Bucke explained how his book's publication was being funded: "We shall stereotype the book. It will only cost me six or seven hundred dollars to publish and the sale of about a thousand copies will make me about square, so that I cannot lose much." He had indicated to Forman on December 23, 1878 that he promised prospective publishers that he would guarantee all costs, and that if he failed to find a publisher he would "get some man to print it and publish it myself," suggesting he understood the value of a publisher, and the difference between publishing and printing. Indeed, although there is no book contract in his extant records, a later letter to Forman on October 31, 1879 made the publishing arrangement explicit: Bucke essentially paid for publication, starting with the stereotype plates and then paying a commission for sales through the publisher's distribution and marketing networks. (Commission publishing was a common arrangement by the 1870s.) Preparing the book in stereotype would make available cast metal plates of type pages for storage, shipment, trade, and subsequent printing, whether at the same location or elsewhere. At the time, electrotype plates had begun to supplant stereotype plates for making books in America; although the electrotyping of typeset pages was slower and more expensive, once a copper skin formed the face of a plate through electrical conduction, the finished electrotype plates were harder.[35] The publisher's choice of stereotype over the more durable electrotype plates therefore suggests that Putnam's did not anticipate much trade or reprinting from these plates of Bucke's book. The lower cost for stereotype plates may also have influenced Putnam's to select this process over electrotype on Bucke's behalf.

Still keen to secure copyright in England, Bucke wrote to Forman two more times in March about it, to help Putnam's make arrangements for a publisher in London. Within a month, after Forman sent instructions to use the Trübner & Co. imprint, Putnam's prepared around 70 copies of Bucke's book with new Trübner title pages: 56 for Trübner, and a dozen for Forman to distribute. [**Fig. 5**] This procedure was not unusual. Indeed, Trübner had published English editions of Walt Whitman's works in 1860, 1876, and 1881. Typically, as Whitman scholar Edward Whitley has explained, English publishers would distribute imported American copies of the book and "either tip-in their own title page or stamp or paste the name of their publishing house onto the American publisher's title page. They would sometimes take the unbound pages of an American edition and put them in a binding bearing the impress of the British publisher. These editions were limited in number and received limited distribution." Trübner distributed 20 copies of the 1876 edition of Whitman's *Leaves of Grass*, and in 1881 produced a cheap edition in 25 copies, expanded later that year to 500 copies. Finally, Whitman apparently recalled that Trübner had been friendly toward *Leaves of Grass*. It is therefore not inconceivable that Trübner agreed to distribute Putnam's edition of Bucke's *Man's Moral Nature* because it was on a similar spiritual theme, with a dedication to Walt Whitman, and his distribution in 70 copies with his title page was more than he had done initially even for Whitman.[36] The publishers thus evidently saw Bucke's book as more scholarly than popular for a Trübner



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"I am a man who is preoccupied of his own soul."

LONDON
TRÜBNER & CO.
LUDGATE HILL
1879

Figure 5. *Title page, Trübner edition of* Man's Moral Nature. *Source: Internet Archive, Oxford University, Google.*

imprint than Bucke had planned. An account statement for Trübner the next year indicates that the distribution at this British firm, too, was through commission. Trübner also reported to Forman in June 1879 that the firm had sent "edition copies" of Bucke's book to six periodicals.[37] Not only was this a common way of publishing an author's book, but by the 1880s commissions accounted for over half of all the contracts of the firm that Trübner and Co. would join in 1889.[38]

The fact that Putnam's met Bucke's demand for a British imprint did not entirely satisfy him. Bucke's fixation on obtaining copyright outside the United States throughout the publication process for his book was strongly influenced by publishing trade practices in North America. His initial encounters with American publishers had already demonstrated that they were not as impressed with his manuscript as he himself was, and then his American publisher not only attempted to reduce costs in production but did not exert themselves to work with publishers outside the United States. Indeed, Bucke's unsuccessful attempts to land a publisher in New York had caused him to fulminate in his December 23, 1878 letter to Forman about the well-known and longstanding problematic copyright situation for authors outside the United States:

> But damn the impudence of the American publishers I say. You see that they steal all the books they want from the English and Continental writers and get the books of known men in this way and so do not want to publish the work of a man unknown to the public, no odds how good it is, in every instance I offered to guarantee all expenses but that did not make any difference; they said they did not mind the expense but that they want to publish books that would pay and they said that a book called 'Man's Moral Nature' would not pay, no odds how able it was. I assured them that it would pay but they absolutely insisted that they knew better.

As Bucke knew, copyright was denied by American publishers for authors not citizens or residents of the United States; more importantly, until they recognized international copyright in 1891, American publishers could legally reprint the publications of foreign authors without permission and not pay either the authors or their foreign publishers. Given that American publishers might undercut each other in the trade through such extensive reprinting, some worked together in a kind of self-regulation known as courtesy of the trade, whereby priority in publication and association helped to reduce competition.[39] Regardless, from Bucke's perspective, this trade practice in the United States made it all the more difficult for a new author like himself to enter the market.

Over the next few months, Bucke continued to express greater concern about obtaining copyright outside the United States than did Putnam's. Despite declaring in March that Putnam's were "first class straight forward people to deal with," Bucke increasingly complained about them and their attempt to appease his concern. On May 13, Bucke suggested that Putnam's had "made some damned blunder in their application to MacMillan & Company or else they have been trying to play sharp." He explained: "I never contemplated asking MacMillan or anyone else on either side of the water to take any risk in the book. I am quite willing to bear this myself since I have had the trouble of writing it." Again, this

statement seems to suggest that Bucke expected to pay the full cost of publication. Now that the negotiation with Macmillan had been closed, Bucke had felt it best to adopt Forman's suggestion to send copies to Trübner to obtain a copyright in Britain. But he was worried:

> Now tell me will this be a bona fide copyright? The law in Canada is that to get copyright the book must be PRINTED and PUBLISHED in Canada and the person entering the book must swear that it is PRINTED in Canada. If the law is the same in England our copyright will come to grief.

On July 8, Bucke then declared that Putnam's had not wanted to publish his book in England; in fact, the firm may have thought "it was making a great fuss about a small matter to publish the book in two other countries." According to him, whatever the reason, their letter to MacMillan did not agree with the offer Bucke expected. Accepting his role in any misunderstanding, he nonetheless believed Putnam's had deliberately undermined him: "But they published on this side on March 7th, so they must have intended to kill off the English copyright in point of time."

Bucke was correct to wonder about copyright, which was a very complicated situation for a Canadian at the time—especially for a Canadian resident publishing through an American publisher—and he was placed in a difficult position in the 1870s. It would be years before the transformative impact of the Anglo-American Copyright Agreement of the 1890s. As he indicated, the Canadian copyright act in 1875 had added a condition that works be "printed and published or reprinted and republished in Canada." However, the rest of this Canadian copyright condition read "whether they be so published or produced for the first time, or contemporaneously with or subsequently to publication or production elsewhere." In short, plates for books could be made elsewhere, and the fact that Bucke had already stated his book would be typeset in stereotype shows it would be in compliance for a resident Canadian author if produced in Canada with a set of those plates at the same time as production with another set of plates elsewhere. Furthermore, the Act was sufficiently ambiguous that it gave Canadian copyright to a British book under imperial copyright, meaning, as Eli MacLaren has shown, that a lack of Canadian copyright did not necessarily mean a lack of copyright in Canada.[40] Accordingly, over the course of the next year, Putnam's involved Willing & Williamson of Toronto, whose imprint appeared on the copies for sale in Canada. [**Fig. 2**] Bucke's views on the whole copyright situation were explained more fully when he subsequently wrote to Forman on October 31, 1879 about a new "little book" on Walt Whitman:

> what do you think if I try to get Trubner to publish it and send Putnams a set of plates? or sheets? You see I cannot get a copyright by publishing through Putnam—for HE [Whitman] is not the author and I am not an American citizen. Would Trubner publish? and on what terms? With Putnam I pay for manufacturing "Man's Moral Nature" (it came to $520, say £104) and then I sell to him for $750 per thousand copies and he publishes. He would probably ask the same terms in the case of another book. Now if Trubner would do as well for me I should gain the advantage of copyright and perhaps I would have a

> little better chance of selling my book, there is perhaps more curiousity [sic] about W.W. in England than here. At all events I would have a publisher in N.Y. and Toronto as at present.

In addition to copyright concerns, the publishers' commercial perspective ran counter to Bucke's intuitive and misguided approach to book sales. Although he admitted on April 11, 1879 that he had no idea what its sales would be, he nonetheless declared that his book will be a "hit." He believed it would sell a thousand copies because he knew many people who were anxious to buy it: "These people are scattered all over the States and Canada," he noted, and "I have no doubt myself that in any town where a few copies are sold, a good many more will be bought, that is, I am certain the book will take—recommend itself. This is probably an author's delusion." He expanded on his inflated notions about the significance and reader demand for his book in this letter, declaring it "an announcement of an immense and valuable discovery, affecting every man in a most vital manner." Within the published book itself, however, his address to the reader was more modest: "I merely offer my opinion—I take no responsibility in the matter. The thought is no more mine than it is yours if you read the book and understand it. I no more made the thought than I made myself—it grew of its own accord, and now it can take care of itself; or if it cannot do that, it can do as plenty of other thoughts have done—it can die."[41]

Publishers' records in Bucke's papers indicate that they were trying to sell this book through to 1883. When he was casting around for an American publisher, Bucke had suggested going to London before other, much less desirable possibilities: "If I fail there I shall have it published by Willing & Williamson of Toronto or get some man to print it and publish it myself."[42] By 1880, the advertisement for *Man's Moral Nature* in his pamphlet *Alcohol in Health and Disease* showed three publishers: G.P. Putnam's Sons, New York; Willing & Williamson, Toronto; and Trübner & Co., London, Eng. [**Fig. 6**] Yet even with three publishers in three countries, sales were poor. Putnam's printed 750 copies in May 1879. After distributing 250 copies to Willing & Williamson, 75 copies to Trübner, and sundry other complimentary copies, they still had 289 copies on hand in August 1879. Their actual sales over the summer were only 53.[43] Trübner had 25 copies on hand the next January and sold only four of those in 1880.[44] By August 1883, Putnam's sent 210 copies to David McKay, publisher and bookseller in Philadelphia, and their statement in September showed 25 copies sold, with one copy on hand retained as a sample. In November 1883, Willing & Williamson had half their allotment still on hand (127 copies).[45] The total sales between 1879 and 1883 was perhaps a third of the print run, a far cry from the thousand copies that Bucke initially thought would be printed and would sell to break even on his own subsidy.

Reception of Man's Moral Nature

In the end, it appears that the publishers did indeed know better than Bucke, for *Man's Moral Nature* not only did not sell, it also met a lukewarm reception among general readers and specialists alike. It was Bucke himself who stated on

July 8 that the book was "being very well received here," adding that "some of the ladies seem to like it very much which rather surprises me." Interestingly, in August he then asked Forman to have Trübner send a copy at Bucke's expense to Charles Darwin (whose response is not known). Via Forman, Bucke received a lengthy critique from artist and poet William B. Scott in Scotland. Although Scott wished for more background before Bucke began his argument, and he disagreed with Bucke's notion that the intellect has no control over the moral, he delighted in reading Bucke's view of the perfectability of human nature in "a book like this, so unmistakably the work of a man of scientific genius."[46] When Bucke's pamphlet on *Alcohol in Health and Disease* was published the next year in Ontario, its advertisement for *Man's Moral Nature* contained eleven excerpts from reviews in newspapers, religious and medical journals mainly in Ontario with two from the United States. These were presumably the good reviews to which Bucke had referred. One quotation, from a Detroit publication, *New Preparations*, conveyed the popular science intent of Bucke's work :"This volume is a treat to the lover of good sense, good science, and good English."[47] These "press extracts" appeared as well in biographical publications about Bucke.[48]

These excerpts were chosen mainly to indicate the book's ability to stimulate thought and reflection. The full reviews and notices, however, consistently offered ambiguous reactions to *Man's Moral Nature*: the book's synthesis of earlier theories was somewhat original and praiseworthy, they maintained, but the inferences drawn were confusing and questionable. For example, the notice quoted from *Canada Presbyterian* described Bucke's book as unlike common compilations, "but a fresh, original and suggestive work" because the author "strikes out new paths for himself." Yet the reviewer remarked on the "startling" part of the focus on the physical basis of the moral nature and noted the ways in which Bucke seemed to interpret "moral nature." Struggling to understand Bucke's viewpoint from the proofs presented, the reviewer believed that "The bearing of these and other arguments upon our author's conclusions will be called in question. But although the reader may not accept the views advanced, he will still admire the book for its suggestiveness and vigorous thought."[49] Another reviewer thoroughly summarized Bucke's book and its argument at length in *Rose-Belford's Canadian Monthly and National Review*. The essayist did not offer insights into the manner of Bucke's argument, indicating only that with the inclusion of anatomical plates for the sympathetic nervous system the "subject is so clearly treated that any lay reader may easily comprehend it by the aids and helps provided." The description of Bucke's discussion concluded "This is no new theory. We all recognise, and have recognised all along, that this is so—that the highest moral nature is nearest in accord with the truth of things."[50]

Reviews quoted from medical journals, written by members of the general medical profession—"thinkers and men with a spice of science about them" that he hoped would fully understand—also deemed *Man's Moral Nature* to be unoriginal. A review in *Canada Medical Record* considered Bucke's book to be novel only as a piece of Canadian writing: "In poetry, literature, history and science,

BY THE SAME AUTHOR.

OCTAVO, CLOTH, EXTRA, $1.50,

MAN'S MORAL NATURE,

AN ESSAY,

PUBLISHED BY

G. P. PUTNAM'S SONS, NEW YORK,
WILLING & WILLIAMSON, TORONTO.
TRÜBNER & CO., LONDON, ENG.

MAY BE ORDERED OF ANY BOOKSELLER.

PRESS EXTRACTS.

We recommend all who believe with Pope that the "proper study of mankind is man," to read this book.—*Hamilton Spectator.*

It is such treatises as this which awaken and quicken thought, and open up almost boundless fields for speculation.—*Hamilton Evening Times.*

It is a work of thought and altogether remarkable. It is an original work, displaying a wide range of information, a power of acute and independent thought, such as a philosopher ought to possess, and no common ability to embody conclusions in simple words, so as to awaken reflection in the mind of those who may ponder over its chapters.—*London Free Press.*

Whatever opinion may be held as to the soundness of the views advanced by Dr. Bucke, there is no question that his book is an interesting contribution to the discussion of a very important subject.—*London Daily Advertiser.*

Without attempting an analysis of the argument we may describe it as the work of a man who writes with intelligence and in a charming spirit of candor. The style is clear and strong and the moral tone pure.—*The Christian Register, Boston, Mass.*

At every page we are struck by the originality of thought and the felicity of some unexpected illustration, and by them a flash of light is thrown on many subjects which before seemed quite obscure.—*Ottawa Free Press.*

It will undoubtedly attract attention and give rise to discussion, for it is not at all one of those compilations so common at the present day, but a fresh, original, and suggestive work.—*Canada Presbyterian, Toronto.*

It is full of suggestive ideas.—*Detroit Free Press.*

There is no small gratification in reviewing a book so replete with substantial, clever, and courageous writing as is the little volume now before us.—*The Canada Lancet.*

The book is worth reading even should the peruser differ from the writer, and all must admire the ingenious way many facts are brought in to uphold this material theory of man's moral nature.—*The Canadian Journal of Medical Science.*

This volume is a treat to the lover of good sense, good science, and good English.—*New Preparations, Detroit.*

Figure 6. *Advertisement,* Man's Moral Nature *in R.M. Bucke, Alcohol in Health and Disease (1880), last page. Source: Internet Archive, CIHM 00322, Canadiana.org, in University of Alberta Libraries.*

Canada has produced her several authors in some of whom our young country has an honest pride," this review began, "but never before has any of her sons ventured upon the domain of speculative and practical philosophy." Although the reviewer found that summarizing the book was difficult, in part because Bucke's style was "decidedly laconic," he praised Bucke for making the subject understandable to general and medical readers alike and hoped his discussion would be incorporated into medical textbooks and medical school teaching of physiology.[51]

Reviews in medical journals carefully weighed and criticized Bucke's assumptions and interpretations. The reviewer in *Canadian Journal of Medical Science* opened by questioning Bucke's use of language, for "There are a number of novel ideas put forth in this excellently got-up book, and couched in such unusual language, that, in justice to the author it is necessary to know what is meant by many of the expressions used." The review launched into a philosophical analysis, first of the book's title, and then of particular expressions, for their sense was beyond the author's own definition. The second part of the book, the reviewer conceded, had some novel metaphysical distinctions. Yet he then identified examples of statements lacking proof—for which the reader must accept Bucke's claim that he does not propose to prove anything in this book—or of statements for which the contrary is true. "The balance of the book contains the fulcrum idea of the whole," the reviewer delineated, yet "This is an old doctrine revived." The reviewer provided fuller explanation with respect to medical history before concluding:

> Space forbids us noticing other points in Dr. Bucke's book from which many must differ. The reader cannot, however, rise from reading the book without being convinced that the author has honestly endeavoured to arrive at truth in his own way. . . . Unfortunately this has not been done. Yet, the careful collation of isolated truths, and the earnestness seen throughout, commend it to the candid reader as a valuable contribution to Canadian medical literature.

"The book is worth reading," and the compilation of facts admired, the reviewer continued (in the sentence quoted in Bucke's pamphlet), before re-capitulating that "We have endeavoured to give the reader an idea of the scope of the work by criticizing some of the salient points, but nothing short of a perusal of it can do justice to the inventive hypothesis therein set forth in a forceful way."[52]

Although it similarly declared that "Dr. Bucke has rehabilitated, in very attractive garb, an old doctrine which has been...propounded by several eminent physiological moralists," the *Canada Lancet* review was more harsh. Maintaining a sarcastic tone, it raised serious concerns about Bucke's employment of nation state, gender, and race as explanatory tools. First, Bucke's reference to nations to explain moral idiocy was questionable:

> This appeal to the authority of all nations and all times appears to us but a limping reason to be stationed in the front rank of any argument; for what absurdity or what moral monstrosity, might not be sustained on this authority? Dr. B. must surely be well enough read in his own specialty, to know that witchcraft and demoniacal possession were, until very recently, believed in by all nations" [including jurists and theologians].

After impugning Bucke's knowledge of his medical specialty, the reviewer then snidely remarked "We are not half pleased with Dr. Bucke for telling us that the 'moral nature' . . . of woman, obtains preponderance at the expense of the intellectual capacity" in part by reference to woman's smaller brain. "We doubt if either of these propositions has been established," the reviewer declared before pondering the differences between man and woman based on reproductive systems and sexual drive, to emphasize that "Quantity is not quality." The reviewer then took Bucke to task for his discussion of the Jewish race, "who certainly should feel very thankful to him for the moral altitude to which he has elevated them, and not the less so because they may not, before, have felt conscious of their superior merits." Furthermore, as Bucke infers that the moral nature of Jews is better because their lives are better, the reviewer acidly acknowledged, "We are always thankful for new facts, and this is certainly new to us." In short, the concerns raised by this reviewer imply that Bucke was espousing outmoded views in the 1880s. As with the *Canadian Journal of Medical Science* review, the *Canada Lancet* review concluded more positively (again with the statement quoted from it in Bucke's pamphlet and biographical publications), and noted that despite raising these particular concerns, "our readers must not infer that we hold in low estimation the general substance of the work." Not only had the author devoted time and study to the topic, but he had written about it in a style that "though not always elegant, is yet attractive and terse." Significantly, this reviewer, too, placed Bucke's contribution as a Canadian one: "we welcome its entrance into Canadian literature, as a first fruit's offering highly creditable to our young Dominion."[53]

Bucke's colleagues who specialized in mental illness had much greater difficulty with his book. An advertisement for the Toronto publisher, Willing & Williamson, reprinted the whole notice of *Man's Moral Nature* from *Mind*, a British journal, in which the reviewer praised Bucke's attempt to address his unoriginal subject matter "very ingeniously." [**Fig. 7**] In addition, the reviewer noted, "Dr. Bucke writes with a singular earnestness of conviction, and even when his arguments are, as they not seldom are, rather fanciful, the spirit of them does not cease to be scientific."[54] "Fanciful" more than scientific was how two reviews in American journals also characterized *Man's Moral Nature* as they panned it for being both unoriginal and confusing. One whole chapter "hardly rises above what we usually call the physical *temperament* of a person. What has all this to do with the moral nature of man?," asked a reviewer in the *American Journal of Insanity* before declaring "There is to us something very crude and confused in this whole discussion." This reviewer analyzed the "confusion of ideas," suggesting that "The passage is perhaps not quite so clear or frank as might be desired." Of Bucke's keying the development of moral nature to natural selection, the reviewer continued,

> We are hardly concerned to follow out this train of thought, familiar enough to readers of modern scientists [*sic*]. But some of the writer's statements of fact may be open to grave question. We refer to such as the 'superior moral nature' of the living generation of Jews . . . of fat men, as compared with lean, etc.

The review concluded "There is much of this sort of thing, of fanciful rather than scientific character."[55] "This is, in many respects, a rather curious work,"

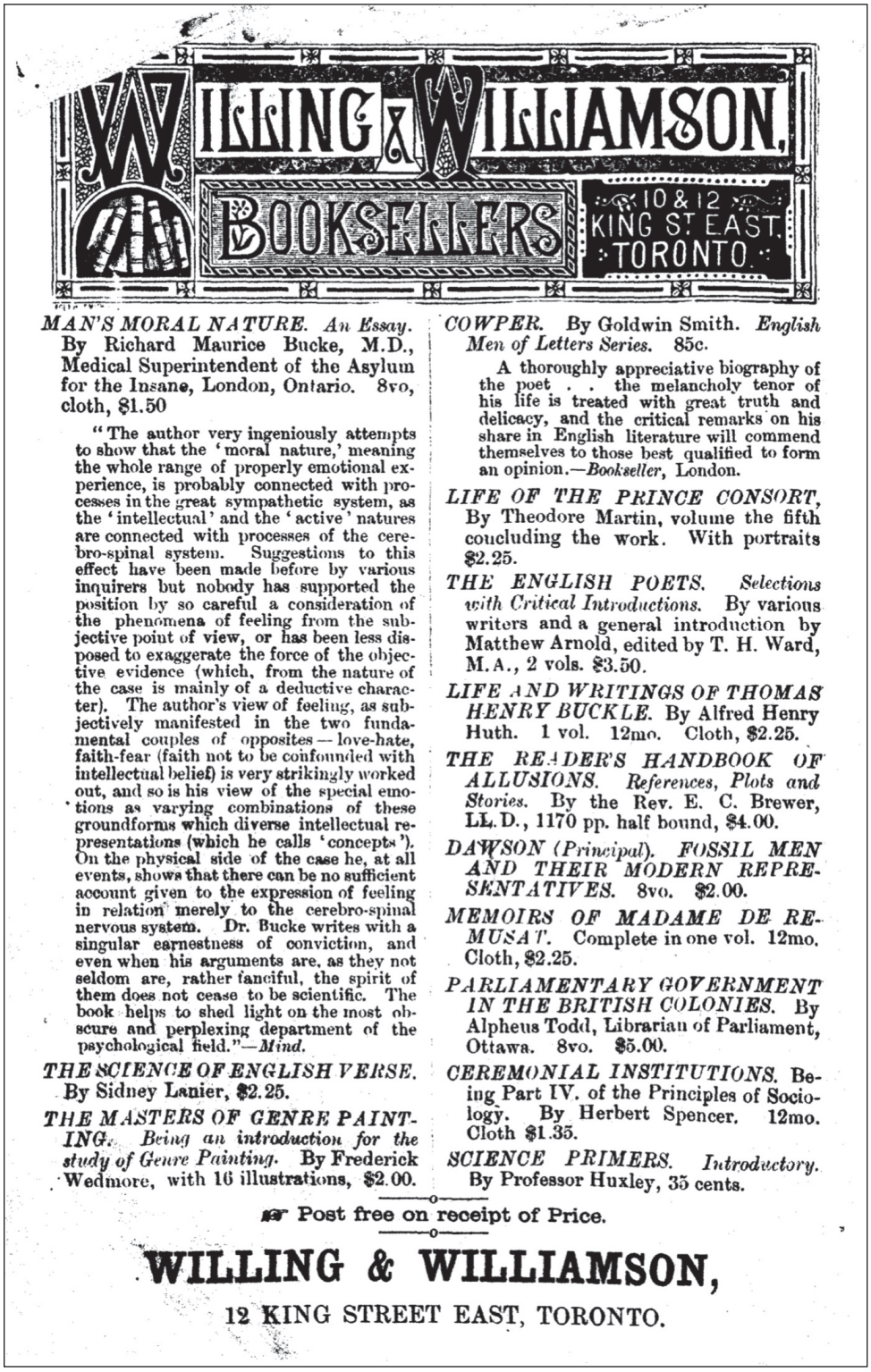
began another review in the *Journal of Nervous and Mental Disease*. While the book seemed to be an expansion of Bucke's earlier articles that "did not appear to call for special notice," its three-part introductory section "savors of affectation," a peculiar arrangement that reflected the reader's sense of the whole book. This reviewer scrutinized several chapters, objecting that one had "faulty and incomplete analysis, the confusion of terms, implying to some extent, also, a looseness, if not confusion, of ideas, and the great expansion and misuse of the term, moral nature." Another was "simply a sort of reversion to antiquated psychological ideas, prevalent in the dark ages, when physiology was unknown, and an attempt to support these exploded theories by an evidently very imperfect knowledge of the anatomy and physiology of the nervous system." As if this harsh criticism were not bad enough, the reviewer openly questioned Bucke's knowledge:

> The author seems entirely unacquainted with the intimate physiological connections of the sympathetic with, and its dependence upon, the cerebro-spinal centres. . . . We should apologize to our readers for giving so much attention to these points, but . . . these are the views of a very respectable physician, evidently a man of considerable general reading, a leading member of the American Association of Superintendents of Asylums . . . . If any one who reads this cannot see at once how unsupported they are by the really scientific modern physiology, we would simply advise him to recommence his studies or reform his mental constitution.

In short, this reviewer concluded, "we do not think the author has done wisely in the production of this work."[56] As these reviews in leading specialty journals attest, Bucke unsuccessfully attempted to write a popular science book for men of science, to whom he might transplant his ideas. Moreover, all of the reviews, whether in religious, medical, or specialty journals, praised Bucke mainly for his effort. Most tripped over his expansive interpretation of "moral nature" and recognized that other readers would have difficulty with his opinions, interpretations, and statements, even if they found them acceptable in the guise of his intent. As Shortt indicated in his citation of a few reviews from international medical journals, these readers agreed with the basic assumptions of Bucke's book: that the key to understanding the human mind lay in application of concepts from neurology, psychology, and evolution. It is particularly telling that three medical journals in Canada commended the book as a solid contribution to Canadian literature in general and in medicine.Despite its problems, it was important to them to support a Canadian colleague, encourage Canadian writing, and soften intellectual criticism of scientific professionals in Canada who aimed to contribute to larger literature outside the country. Although not examined by Shortt, these reviews foreshadow his later assessment of the book as notable for being the first Canadian monograph on neuropsychiatry.[57]

Transnational Publishers, North American Readers of Popular Science

Working alone on his book manuscript from his asylum office in London, Ontario, Richard Maurice Bucke thus ran into difficulties when it came to publishing, especially outside Canada. This activity occurred in an early stage



WILLING & WILLIAMSON,

BOOKSELLERS

10 & 12 KING ST. EAST, TORONTO.

MAN'S MORAL NATURE. An Essay. By Richard Maurice Bucke, M.D., Medical Superintendent of the Asylum for the Insane, London, Ontario. 8vo, cloth, $1.50

"The author very ingeniously attempts to show that the 'moral nature,' meaning the whole range of properly emotional experience, is probably connected with processes in the great sympathetic system, as the 'intellectual' and the 'active' natures are connected with processes of the cerebro-spinal system. Suggestions to this effect have been made before by various inquirers but nobody has supported the position by so careful a consideration of the phenomena of feeling from the subjective point of view, or has been less disposed to exaggerate the force of the objective evidence (which, from the nature of the case is mainly of a deductive character). The author's view of feeling, as subjectively manifested in the two fundamental couples of opposites — love-hate, faith-fear (faith not to be confounded with intellectual belief) is very strikingly worked out, and so is his view of the special emotions as varying combinations of these groundforms which diverse intellectual representations (which he calls 'concepts'). On the physical side of the case he, at all events, shows that there can be no sufficient account given to the expression of feeling in relation merely to the cerebro-spinal nervous system. Dr. Bucke writes with a singular earnestness of conviction, and even when his arguments are, as they not seldom are, rather fanciful, the spirit of them does not cease to be scientific. The book helps to shed light on the most obscure and perplexing department of the psychological field."—*Mind.*

THE SCIENCE OF ENGLISH VERSE. By Sidney Lanier, $2.25.

THE MASTERS OF GENRE PAINTING. Being an introduction for the study of Genre Painting. By Frederick Wedmore, with 16 illustrations, $2.00.

COWPER. By Goldwin Smith. *English Men of Letters Series.* 85c.

A thoroughly appreciative biography of the poet . . the melancholy tenor of his life is treated with great truth and delicacy, and the critical remarks on his share in English literature will commend themselves to those best qualified to form an opinion.—*Bookseller*, London.

LIFE OF THE PRINCE CONSORT, By Theodore Martin, volume the fifth concluding the work. With portraits $2.25.

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LIFE AND WRITINGS OF THOMAS HENRY BUCKLE. By Alfred Henry Huth. 1 vol. 12mo. Cloth, $2.25.

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PARLIAMENTARY GOVERNMENT IN THE BRITISH COLONIES. By Alpheus Todd, Librarian of Parliament, Ottawa. 8vo. $5.00.

CEREMONIAL INSTITUTIONS. Being Part IV. of the Principles of Sociology. By Herbert Spencer. 12mo. Cloth $1.35.

SCIENCE PRIMERS. Introductory. By Professor Huxley, 35 cents.

☞ Post free on receipt of Price.

WILLING & WILLIAMSON,

12 KING STREET EAST, TORONTO.

Figure 7. *Advertisement, Willing & Williamson,* The Bystander *(July 1880): last page. Source: Canadiana.ca, CIHM.8-06586-7.*

of Bucke's career, when the author was extraordinarily impatient to become published—as Bucke himself recognized: "like all authors, at all events in case of their first book, I am satisfied that my book is going to sell and be a success."[58] Although he understood the distinction between printing and publishing, he did not fully appreciate the work of publishers. He wanted to work through them for copyright, distribution, marketing, and sales, but he tended to downplay their role in all of these things and to misunderstand their need to make a profit for their firm. His naivete led to confusion and then anger. As well, he focused his search on one city only, New York, to find a general publisher for his rather esoteric work. (Though interestingly, G.P. Putnam's Sons was a main publisher in New York up to 1914 for Canadian scientific monographs, second only to Appleton.)[59] As Bucke sought to publish his book "in a popular manner" for a wider audience, he overlooked Philadelphia even though he was probably aware that renowned publishers in medicine had become well established there. Indeed, after four years of slow sales, Putnam's itself sent hundreds of copies of his book to a Philadelphia bookseller. Perhaps also owing to a medical connection, Bucke was initially prepared to consider Willing & Williamson in Toronto, a Canadian firm recognized for distributing medical books, if he could not find a publisher in New York. It was Bucke's more experienced and knowledgeable friend, Harry Buxton Forman, who smoothed the way to the publisher for his book in London, Trübner, and who himself received copies of Bucke's book for distribution.

Bucke's experience reflects that of a medical practitioner writing while engaged in busy medical practise. Since few records exist for these specific kinds of authors in Canada in addition to a lack of records for those engaged full-time in scientific pursuits, any generalization about publishing experience—especially transnational publishing experience—would be problematic. Authors' book prefaces sometimes offer fleeting insights. For instance, in his *Manual of the Principles of Surgery, Based on Pathology for Students*, published through Lindsay & Blakiston in Philadelphia in 1866, physician William Canniff of Belleville, Ontario, implied that the distance between his home in rural Ontario and his publisher in metropolitan America caused some concern: "Not having personally superintended the work through the press," he noted apologetically, "there may consequently be found a few blemishes which the printer and proof-reader could not feel at liberty to remove."[60] The reason for Canniff's choice of publisher outside the country must be inferred, but it is likely he understood Philadelphia as the intellectual capital for medicine in North America, home to many well-established publishers that specialized in medicine and allied fields. Established in 1843, Lindsay & Blakiston was one of them, publishing extensive lists of medical books until the twentieth century before being absorbed by general publishers.[61] Not only did Canniff seek a wider distribution in the Anglo-American world of medicine in this way, but reviewers in this world reacted favorably: the *New York Medical Journal*, for example, noted that his book "does credit to the industry, practical knowledge, reading, and good sense of the author."[62]

Since *Man's Moral Nature* was Bucke's first book, and *Principles of Surgery* was

Canniff's only medical book, these two books may not represent even their own substantial publishing experience. Indeed, Canniff is one of the few medical practitioners to leave personal papers, and these records—like those of Bucke—contain much more information about his historical book, *The Medical Profession in Upper Canada, 1783-1850*, which was published in Toronto in 1894 by William Briggs. Unlike Bucke, Canniff chose an important Canadian publisher for what was essentially a work on local history: Briggs was Book Steward for the Methodist Book and Publishing House, then the largest publisher in Canada, which became Ryerson Press in the twentieth century.[63] Similarly, another of the few medical practitioners to leave records of their book publishing experience was Gordon Murray: later in the twentieth century he, too, would have two autobiographical books for general readers published initially in Canada through Ryerson Press, and then in England through a specialty publisher.[64]

In short, the reception of Bucke's first book shows that ultimately it was both a commercial and scholarly failure. Sales were poor enough, at one-third of the print run, as to confirm Bucke's own feeling that he suffered an author's delusion about the potential success of his work. Reviewers did not stimulate more interest, as they consistently pointed to the lack of originality of the concepts, the confusion that abounded in discussion of the concepts, and the problematic writing. Specialist reviewers excoriated Bucke for presenting unsubstantiated and outmoded views of physiology and of whole groups of people. The most praise routinely given was for Bucke's efforts. Most significantly, *Man's Moral Nature* achieved recognition by some Canadian reviewers who viewed the book with some pride as a contribution to an emerging Canadian literature, written by Canadian residents, to be encouraged in a "young" country within the continental North American market.

Nevertheless, a few observations about transnational publishing of popular science in Victorian Canada arise from this study of Richard Maurice Bucke and *Man's Moral Nature*. Some of them relate first to the activity of science, no matter the historical period past or present. As with other such authors, perhaps, Bucke did not publish books to seek financial gain. Indeed, he subsidized the publication himself and would need to sell a thousand copies to break even on this expenditure. Furthermore, he emphasized that he aimed mainly to "transplant" his ideas into better minds than his own, to make sense of a complex subject. Because he sought neither recognition for his theory of the emotions among his medical colleagues, nor their applied use of his book, he was determined to publish through a general publisher in New York.

Readership of such popular scientific books, regardless of their reception through reviews and sales, is of interest from the perspectives of science and location. That readership might be projected—and exaggerated—by practitioner authors with scientific aspirations is seen in Bucke's insistence that he had potential readers all over North America on the basis of a few personal contacts. He believed as well that his book would generate great excitement: from his self-diagnosis in this view, in accord with his medical specialty, he was indeed

suffering from a writer's delusion. Certainly, the reviews of his book by colleagues who specialized in mental illness attested to this delusion, with his "fanciful" interpretations, "affectation," and "confusion of ideas" that were all unexpected for his professional stature in their field. This frame of mind intensified Bucke's inability to comprehend that the business of a publisher is commercial, not intellectual. Despite his offer to different publishers to "guarantee all expenses," he was infuriated at their response that such a book would still not pay to publish it. Such annoyance and impatience was not unusual in his profession, however. Over the next century, medical practitioners often loudly maintained that their investigative and synthesizing scientific work was done freely for society and should be freely produced and distributed by publishers for the betterment of society.[65] In many ways, Bucke's practitioner-oriented views of publishers in the 1870s as printers with add-on credentials (especially when he could subsidize his own publication) reflect the much later views of Gordon Murray in the 1960s, just as both these two Canadian doctors greatly underestimated the market for their books in both centuries.

It is not clear from Bucke's experience that such Canadian authors wrote and published their books with anything other than an established publisher and a larger audience in mind; in other words, they went to the economic centre of the North American continent as much as to the intellectual centre. When book authorship and the publishing business were still emerging in Victorian Canada, it made more sense for authors of books for general readers to publish with established and recognized publishers in New York, to reach Canadian readers as well as Americans. More importantly, it is likely that a North American readership was a prerequisite of American publishers whose main concern was the market for these popular scientific books. Indeed, this requirement was a prominent feature of all North American publishing in the last decades of the nineteenth century. As scholars have affirmed, Canadian authors, whether literary or not, participated in a continental trade in publishing. In fact, by 1876 by far the greatest value of books exported from the United States was to Canada (close to 60 per cent), eclipsing the longstanding transatlantic trade between the U.S. and Europe.[66] The American market for Canadian writers at this time not only included Canada, but the centres of this market were in New York and other cities in the northeastern United States. Hence, those who wished to earn a living as writers, illustrators, editors, etc., moved from Canada to these publishing centres, as literary scholar Nick Mount has emphasized, "from the margins to the centres of a continental literary culture."[67] As well, as MacLaren points out in his book about copyright and the Canadian book trade, literary authors within Canada refused to give their manuscripts to a Canadian firm because they were financially rewarded by publication in the United States; furthermore, the agency system of publishing in Canada and the copyright law meant that for decades "publishing Canadian literature would paradoxically depend on finding an American publisher."[68] Closely tied to financial success was wider distribution and circulation, factors that were just as, if not more, important to scientific authors.

Unlike some literary counterparts, and later medical authors,[69] however, Canadian scientific authors in the Victorian period did not—could not—move away from their sphere of professional employment and activity but instead had to negotiate with book publishers from a distance. They sometimes felt that they operated at a disadvantage. As he fretted over acquiring copyright for his book outside Canada, for instance, Bucke sent many letters to both his American publisher and his English friend. His attempts to circulate his ideas as widely as possible in book form involved three publishers in three countries, all based in urban centres some distance from London, Ontario. This process did not follow a linear "periphery to centre" movement; rather, it shows that in this way Canada shared the experience of many other nations that relied on metropolitan sites of publishing that were geographically located outside their own country.

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I am indebted to Bertrum H. MacDonald, whose research informs this discussion for Canada, and who co-authored studies with me that examined Canadian scientific authors and their publishing processes. Versions of our papers that briefly included Bucke were presented at the Society for the History of Authorship, Reading and Publishing, and a joint session of the Canadian Association for Studies of Book Culture and the Bibliographical Society of Canada. I would also like to thank William Knight and two anonymous reviewers of Scientia Canadensis *for their thorough and insightful comments on an earlier draft of this article.*

Endnotes

1 See section B, "Published Works," in *Richard Maurice Bucke: A Catalogue Based Upon the Collections of the University of Western Ontario Libraries*, ed. Mary Ann Jameson (London, ON: The Libraries, University of Western Ontario, 1978), 24-42.

2 See section I, "Biographical and Critical Writings on R.M. Bucke," in *Richard Maurice Bucke: A Catalogue*, ed. Jameson, 113-18; Ramsay Cook, *The Regenerators: Social Criticism in Late Victorian English Canada* (Toronto: University of Toronto Press, 1985), ch. 6; S.E.D. Shortt, *Victorian Lunacy: Richard Maurice Bucke and the Practice of Late Nineteenth-Century Psychiatry* (Cambridge: Cambridge University Press, 1986), xvi.

3 Shortt, *Victorian Lunacy*, 78-91; S.E.D. Shortt, "Bucke, Richard Maurice," in *Dictionary of Canadian Biography* (Toronto: University of Toronto Press, 1994), XIII: 122-6, http://www.biographi.ca/en/bio/bucke_richard_maurice_13E.html.

4 Susan Sheets-Pyenson, *John William Dawson: Faith, Hope, and Science* (Montreal and Kingston: McGill-Queen's University Press, 1996), ch. 9.

5 Jennifer J. Connor and Bertrum H. MacDonald, "Writing in Canada, Publishing in the United States: the Experiences of Four Scientific Authors in the Victorian Period," (presentation, Canadian Association for Studies in Book Culture and Bibliographical Society of Canada, Ryerson University, Toronto, May 2017). Bertrum H. MacDonald is currently examining the papers of J.W. Dawson from the perspective of Dawson's publishing experience.

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9 Marina Frasca-Spada and Nick Jardine, "Introduction: Books and the Sciences," in *Books and the Sciences in History*, eds. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 4. Aileen Fyfe, for instance, argues that the history of popular science and religion in the Victorian period might differ from expert science and religion in order to concentrate her study on the period when popular science publishing was developed: see *Science and Salvation: Evangelical Popular Science Publishing in Victorian Britain* (Chicago: University of Chicago Press, 2004), 3. See also *Science in Print: Essays on the History of Science and the Culture of Print* , eds. Apple, Downey, and Vaughn.

10 Aileen Fyfe, "Conscientious Workmen or Booksellers' Hacks?: The Professional Identities of Science Writers in the Mid-Nineteenth Century," *Isis* 96, no. 2 (2005): 222; James Mussell, *Science, Time and Space in the Late Nineteenth-Century Periodical Press: Movable Types* (Aldershot: Ashgate, 2007); James A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2000); James A. Secord, "Science, Technology and Mathematics," in *History of the Book in Britain, Vol. 6, 1830-1914*, ed. David McKitterick (Cambridge: Cambridge University Press, 2009), 469-71.

11 David N. Livingstone, *Putting Science in Its Place: Geographies of Scientific Knowledge* (Chicago and London: University of Chicago Press, 2003); David Clifford, Elisabeth Wadge, Alex Warwick, and Martin Willis, eds., *Repositioning Victorian Sciences: Shifting Centres in Nineteenth-Century Thinking (*London & New York: Anthem Press, 2006); Faidra Papanelopoulu, Agustí Nieto-Galan and Enrique Perdiguero, eds., *Popularizing Science and Technology in the European Periphery, 1820-2000* (Aldershot: Ashgate, 2009); Brett M. Bennett and Joseph M. Hodge, eds., *Science and Empire: Knowledge and Networks of Science Across the British Empire, 1800-1970* (New York: Palgrave Macmillan, 2011); David N. Livingstone and Charles W.J. Withers, eds., *Geographies of Nineteenth-Century Science (*Chicago: University of Chicago Press, 2011).

12 Faidra Papanelopoulu, Agustí Nieto-Galan and Enrique Perdiguero, "Concluding Remarks," in *Popularizing Science and Technology in the European Periphery*, ed. Papanelopoulu, Nieto-Galan and Perdiguero, 237.

13 Jonathan R. Topham, "Rethinking the History of Science Popularization/Popular Science," in *Popularizing Science and Technology in the European Periphery*, ed. Papanelopoulu, Nieto-Galan and Perdiguero, 1.

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15 Jennifer J. Connor, "Publications Exchanges in Distribution: Retracing the Path of a Book Through a Centralized Medical Exchange," *Mémoires du livre\Studies in Book Culture* 10, no, 1 (Fall 2018): 1-42. DOI: https://doi.org/10.7202/1055411ar

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18 Bertrum H. MacDonald, "Science and Technology," in *History of the Book in Canada, Vol. 1, Beginnings to 1840*, eds. Patricia Lockhart Fleming, Gilles Gallichan, and Yvan Lamonde (Toronto: University of Toronto Press, 2004), 297-300; MacDonald and Connor, "Science, Technology, and Medicine: Constructing Authorship," in *History of the Book in Canada*, *Vol. 2, 1840-1918*, eds. Lamonde, Fleming, and Black, 177-86; Jennifer J. Connor, "Medicine and Health," in *History of the Book in Canada*, Vol. 2, *1840-1918*, eds. Lamonde, Fleming, and Black, 419-23.

19 Jennifer J. Connor, "Publisher Ownership, Physician Management: Canadian Medical Journals in the Victorian Era," *Victorian Periodicals Review* 34, no. 4 (2010): 388-428.

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21 For fuller discussion, see MacDonald and Connor, "Science, Technology, and Medicine: Constructing Authorship," in *History of the Book in Canada*, *Vol. 2, 1840-1918*, eds. Lamonde, Fleming, and Black, 178-81.

22 Bertrum H. MacDonald, *Clio's Blindspot?: Science and Technology in Canadian History and the C.I.H.M. Collection* (Ottawa: Canadian Institute for Historical Microreproductions, 1988), 12-13. MacDonald's subsequent study of 5,700 monographs published to 1914 revealed similar information: see Bertrum H. MacDonald, "Publishing of Canadian Scientific and Technical Monographs before 1914," (Paper presentation, Canadian Science and Technology Historical Association, Kingston, Ontario, October 1993). I am grateful to Bertrum MacDonald for providing me with a copy of this unpublished paper.

23 Shortt, *Victorian Lunacy*; Shortt, "Bucke, Richard Maurice." For contemporary biographical notices, see "Richard Maurice Bucke, M.D.," *Canadian Biographical Dictionary and Portrait Gallery of Eminent and Self-Made Men: Ontario Volume* (Chicago and Toronto: American Biographical Pub. Co., 1880), 596-8; "Bucke, Richard Maurice, M.D.," *A Cyclopedia of Canadian Biography: Being Chiefly Men of the Time ...*, ed. Geo. Maclean Rose (Toronto: Rose Pub. Co., 1886), 565-6; "Richard Maurice Bucke, M.D., C.M., F.R.S.C.," *History of the County of Middlesex, Canada* (Toronto: Goodspeed, 1889), 747-8. Bucke has been the subject of a film and most recently included in an exhibit of the London Asylum for the Insane: see John Kent Harrison, Director, *Beautiful Dreamers* (Canada, 1990); *Restoring Perspective: Life and Treatment at the London Asylum* (2009), https://www.lib.uwo.ca/archives/virtualexhibits/londonasylum/index.html.

24 Shortt, *Victorian Lunacy*, 23, 78; Shortt, "Bucke, Richard Maurice."

25 Western Archives, Western University, London, Ontario, AFC 20, Dr. Edwin Seaborn fonds, AFC 20-S5: Historical Research, SS4 Richard Maurice Bucke, Files 92-93: File 92: R.M. Bucke to Harry Forman, 4 July 1878; also quoted in Shortt, *Victorian Lunacy*, 80. For fuller discussion, see Artem Lozynsky, *Richard Maurice Bucke, Medical Mystic: Letters of Dr. Bucke to Walt Whitman and his Friends*

(Detroit: Wayne State University Press, 1977), 35-41. Some whole Bucke letters were published in Lozynsky, *Richard Maurice Bucke, Medical Mystic* and were verified against the originals within the former Richard M. Bucke Collection at the University of Western Ontario; other letters were quoted in Shortt, *Victorian Lunacy*. Letters reprinted and quoted in these two published studies are noted hereafter where applicable.

26 Richard Maurice Bucke, *Man's Moral Nature: An Essay* (New York: G.P. Putnam's Sons; Toronto: Willing & Williamson, 1879), 200.

27 Shortt, *Victorian Lunacy*, 90-1. For a summary of Bucke's discussion in *Man's Moral Nature*, see Shortt, *Victorian Lunacy*, 85-91.

28 Shortt, *Victorian Lunacy*, 78-80.

29 Harry Buxton Forman would be uncovered as a forger, along with his colleague Thomas Wise, with the publication in 1934 of John Carter and Graham Pollard, *An Enquiry into the Nature of Certain Nineteenth Century Pamphlets* (London: Constable, 1934). See also John Collins, *The Two Forgers: A Biography of Harry Buxton Forman and Thomas James Wise* (New Castle, DE: Oak Knoll, 1992). Bucke figures large in Collins' biography thanks to the extensive correspondence, visits, and familial ties between the two men; according to Collins, the letters housed at Western University in London, Ontario provide all the details about Forman's domestic life: see 286-7.

30 Western Archives, Seaborn fonds, AFC 20-S5-SS4: Bucke to Forman, 27 October 1878; also quoted in Shortt, *Victorian Lunacy*, 80.

31 Bucke, "Advertisement," in *Man's Moral Nature*, vii.

32 Unless otherwise noted, all these letters from Bucke to Forman are available in Western Archives, Seaborn fonds, AFC 20-S5-SS4, cited in full above, and this discussion cites only their dates. The description of letters from Bucke to Forman in Jameson's catalogue explains that they were enclosures, transcripts typed from the originals in the collection of Maurice Forman; after the sale of Forman's collection in 1972, the location of the original copies by Bucke is unknown. Consequently, according to Jameson, "these typescripts thus may possibly be the only extant record of the letters"; see her *Richard Maurice Bucke: A Catalogue*, 44. Owing to their provenance, these letters were moved from the Bucke Collection to the Edwin Seaborn fonds; their institutional reference then underwent further refinement in the finding aid. I am grateful to Anne Daniel, Associate Archivist, Western University Archives, for her help in locating these letters in the new fonds and confirming some of their contents.

33 Wyndham D. Miles, *A History of the National Library of Medicine* (Bethesda, MD: National Library of Medicine, 1982), 31, 60; S.L.-P, "Trübner, Nicholas," in *Dictionary of National Biography* (Oxford: Oxford University Press, 1973), XIX: 1189-90. Trübner had served as one of "the most important" agents in London for American publishers as well: John Barnes, Bill Bell, Rimi B. Chatterjee, Wallace Kirsop, and Michael Winship, "A Place in the World," in *History of the Book in Britain, Vol. 6, 1830-1914*, ed. McKitterick, 612. See also Michael Winship, "The National Book Trade System, Part 4: The International Trade in Books," in *A History of the Book in America,* Vol. 3: *The Industrial Book, 1840-1880*, eds. Scott E. Casper, Jeffrey D. Groves, Stephen W. Nissenbaum, and David D. Hall (Chapel Hill, NC: University of North Carolina Press, 2007), 151-2; and Leslie Howsam, *Kegan Paul—A Victorian Imprint: Publishers, Books, and Cultural History* (Toronto: University of Toronto Press, 1999), 141-3.

34 Western Archives, Seaborn fonds, AFC 20-S5-SS4: Bucke to Forman, 23 December 1878; reprinted in Lozynsky, *Richard Maurice Bucke,* 53-7.

35 Michael Winship, "Manufacturing and Book Production," in *A History of the Book in America, Vol. 3: The Industrial Book, 1840-1880*, ed. Casper, Groves, Nissenbaum, and Hall, 45-6. See also Philip Gaskell, *A New Introduction to Bibliography* (New York: Oxford University Press, 1972), 201-6.

36 Edward Whitley, "Introduction to the British Editions of Leaves of Grass," Published Works, The Walt Whitman Archive, https://whitmanarchive.org/published/books/other/british/intro.html.

37 Western Archives, Western University, London, Ontario, AFC 203, Dr. Richard Maurice Bucke and Family fonds, Correspondence, Box AFC 203-1, AFC 203-S1-SS1-F27, From Trübner & Co., Publishers. -- 1881: "Terms for Publishing Books on Commission"; and Western Archives, Seaborn fonds, AFC 20-S5-SS4: Trübner & Co. to Forman, 25 June 1879. Extant records of Nicholas Trübner include

publication books 1851-1897 and account books 1854-1893 held at University College London Special Collections for Routledge. I have not examined them for evidence of Bucke's publication.

38 Howsam, *Kegan Paul—A Victorian Imprint*, 131, 135, 137. In 1889, the firm became Kegan Paul, Trench, Trübner and Co.

39 Jeffrey D. Groves, "The National Book Trade System, Part 3: Courtesy of the Trade," in *A History of the Book in America, Vol. 3*: *The Industrial Book, 1840-1880*, eds. Casper, Groves, Nissenbaum, and Hall, 139-41; Barnes, Bell, Chatterjee, Kirsop, and Winship, "A Place in the World," in *History of the Book in Britain, Vol. 6, 1830-1914*, ed. McKitterick, 612.

40 Eli MacLaren, *Dominion and Agency: Copyright and the Structuring of the Canadian Book Trade, 1867-1918* (Toronto: University of Toronto Press, 2011), 62. See also George L. Parker, *The Beginnings of the Book Trade in Canada* (Toronto: University of Toronto Press, 1985), 184-5. I am grateful to an anonymous reviewer for helping to distill this complex situation.

41 Bucke, "To the Reader," in *Man's Moral Nature*, ix-x.

42 Western Archives, Seaborn fonds, AFC 20-S5-SS4: Bucke to Forman, 23 December 1878; reprinted in Lozynsky, *Richard Maurice Bucke,* 53-7.

43 Western Archives, Bucke and Family fonds, Correspondence Box AFC 203-1, AFC 203-S1-SS1-F24 From G.P. Putnam's Sons, Publishers. -- 1879-1883: Account with Putnam's for *Man's Moral Nature*, 30 August 1879. There do not appear to be any records about Bucke's book in the extant archives for G.P. Putnam's Sons, which do not include the decades between the Civil War and the 1890s. See the finding aid by Emily Minehart and Meg Hixon, G.P. Putnam's Sons Records 1891-1937, Rare Book & Manuscript Library, University of Illinois at Urbana-Champaign; and George Palmer Putnam Collection, 1813-1888 (mostly 1853-1855) C0685, Department of Rare Books and Special Collections, Princeton University.

44 Western Archives, Bucke and Family fonds, Correspondence Box AFC 203-1, AFC 203-S1-SS1-F27 From Trübner & Co., Publishers. -- 1881: "Terms for Publishing Books on Commission."

45 Western Archives, Bucke and Family fonds, Correspondence Box AFC 203-1, AFC 203-S1-SS1-F24 From G.P. Putnam's Sons, Publishers. -- 1879-1883: G.P. Putnam's Sons to Richard Maurice Bucke, 13 August 1883; Account with Putnam's, 1 September 1883; Box AFC 203-1, AFC 203-S1-SS1-F21 From David McKay, Publisher. -- 1883: David McKay to Richard Maurice Bucke, 1 August 1883; account history, 15 November 1883; and Box 203-1, AFC 203-S1-SS1-F29 From Willing & Williamson, Publishers. -- 1880-1883.

46 Western Archives, Western University, Bucke and Family fonds, Medical and Cosmic Consciousness Studies, Box AFC 203-14, AFC 203-S6-SS2-F2: William B. Scott to Harry Buxton Forman, 24 August 1879. William Bell Scott published "The Year of the World: A Philosophical Poem" in 1846.

47 Advertisement for *Man's Moral Nature: An Essay*, in R.M. Bucke, *Alcohol in Health and Disease* (London, ON: William Bryce, 1880), [inside back cover].

48 "Richard Maurice Bucke, M.D.," *Canadian Biographical Dictionary,* 597-8*;* "Bucke, Richard Maurice, M.D.," *A Cyclopedia of Canadian Biography*, 566.

49 Review of *Man's Moral Nature: An Essay* by Richard Maurice Bucke, M.D., *Canada Presbyterian* N.S. 2 (July 18, 1879): 598.

50 P.E.B., "Man's Moral Nature," *Rose-Belford's Canadian Monthly and National Review* 5, no. 1 (July 1880): 51-9; see 53, 59. An earlier notice in this magazine stated that reflection on daily experience will convince everyone that Bucke was right: W.D. LeS, "The Moral Nature and Intellectual Power," *Rose-Belford's Canadian Monthly and National Review* [3] no. 1 (July 1879): 104-5.

51 Review of *Man's Moral Nature: An Essay* by R.M. Bucke, M.D., *Canada Medical Record* 7 (June 1879): 244-5. Bucke's book would be cited in a medical article to support the supposition that diseased organs supplied by the sympathetic nervous system provide a physical cause for moral and emotional disturbances: see T.K. Holmes, "Puerperal Mania," *Canadian Practitioner* 10 (October 1885): 289-90.

52 Review of *Man's Moral Nature: An Essay* by Dr. R.M. Bucke, *Canadian Journal of Medical Science* 4 (September 1879): 271-5.

53 Review of *Man's Moral Nature: An Essay* by Richard Maurice Bucke, *Canada Lancet* 12 (September 1879): 30-2.

54 Advertisement for Willing & Williamson, Booksellers, "*Man's Moral Nature: An Essay*, by Richard Maurice Bucke, M.D.," *The Bystander* 7 (July 1880): [last page]. The review was published in the British journal *Mind* os-V (1 January 1880): 151.

55 Review of *Man's Moral Nature: An Essay* by Richard Maurice Bucke, *American Journal of Insanity* 36, no. 4 (1880): 530-3.

56 "Bucke: The Moral Nature," review of *Man's Moral Nature: An Essay* by Richard Maurice Bucke, *Journal of Nervous and Mental Disease* 6, no. 3 (1879): 514-18.

57 Shortt, *Victorian Lunacy*, 91.

58 Western Archives, Seaborn letters: Bucke to Forman, 28 March 1879.

59 MacDonald, "Publishing of Canadian Scientific and Technical Monographs."

60 William Canniff, *A Manual of the Principles of Surgery, Based on Pathology for Students* (Philadelphia: Lindsay & Blakiston, 1866), iv.

61 Jennifer J. Connor, "Stalwart Giants: Medical Cosmopolitanism, Canadian Authorship, and American Publishers," *Book History* 12 (2009): 210-39.

62 "Canniffs" [*sic*] Principles of Surgery," *Canada Lancet* 4 (July 1872): [advertisement at back].

63 As Canniff was successively a student, faculty member and dean at Victoria College, a Methodist institution, the relationship between author and publisher also resides in this religious affiliation. See Jennifer J. Connor, "To Advocate, To Diffuse, and To Elevate: the Culture and Context of Medical Publishing in Canada, 1630 to 1920," (Ph.D. diss., University of Western Ontario, 1992), 155-7, 299-300; Janet B. Friskney, "Beyond the Shadow of William Briggs Part II: Canadian-Authored Titles and the Commitment to Canadian Writing," *Papers of the Bibliographical Society of Canada* 35 (Fall 1997): 173-5.

64 Jennifer J. Connor, "Between Two Markets: Gordon Murray, Ryerson Press, and the Publishing of Medical Autobiography in the 1960s," *Book History* 23 (2020): 237-268.

65 See, for example, the complaints about publishers that were issued routinely from a high-profile American physician-editor, George M. Gould: Jennifer J. Connor, "Writing Medicine: George M. Gould and Medical Print Culture in Progressive America," in *Science in Print*, eds. Apple, Downey, and Vaughn, 107-29.

66 Winship, "The National Book Trade System, Part 4: The International Trade in Books," in *A History of the Book in America, Vol. 3: The Industrial Book, 1840-1880*, eds. Casper, Groves, Nissenbaum, and Hall, 148, 152, 154; Barnes, Bell, Chatterjee, Kirsop, and Winship, "A Place in the World," in *History of the Book in Britain, Vol. 6, 1830-1914*, ed. McKitterick, 611-12

67 Nick Mount, *When Canadian Literature Moved to New York* (Toronto: University of Toronto Press, 2005), 13. See also MacLaren, *Dominion and Agency*, 3, 12, 166.

68 MacLaren, *Dominion and Agency*, 12, 166.

69 Connor, "Stalwart Giants."

Bibliographic Ghostbusting: The Evanescent Life and Spirited Times of the Canadian Journal of Homoeopathy (1856–57)

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Abstract: *Until recently, analysis of the* ***Canadian Journal of Homoeopathy*** *proved to be difficult; the possibility that this periodical was a bibliographic ghost was plausible. This discussion is based on a close reading of the publication, however, now that a complete run of it is readily and conveniently accessible. This account examines the social and intellectual contexts and also the content of this periodical devoted to mid-Victorian medical reform, in particular the medical sectarian practice of homeopathy in Canada West (previously identified as Upper Canada then later as Ontario), while situating its production and publication within other studies of print culture and medical journalism in Canada. Pivotal in this enterprise as founding editor and publisher were the efforts of homeopath Dr. W.A. Greenleaf of St. Catharines and Hamilton.*

Résumé : *Jusqu'à récemment, l'analyse du Canadian Journal of Homoeopathy s'est révélée difficile; la possibilité que ce périodique soit un fantôme bibliographique était plausible. Cette discussion se fonde toutefois sur une lecture attentive de la publication, maintenant que l'exercice est entièrement et aisément possible. Ce compte rendu examine les contextes sociaux et intellectuels ainsi que les contenus du périodique consacré à la réforme médicale au milieu de l'époque victorienne, en particulier à la pratique médicale sectaire de l'homéopathie au Canada occidental (autrefois le Haut-Canada, puis l'Ontario), tout en situant sa production et sa publication dans le cadre d'autres études sur la culture de la presse écrite et du journalisme médical au Canada. Les efforts du rédacteur fondateur et éditeur de W.A. Greenleaf, homéopathe à St. Catharines et à Hamilton, ont été déterminants dans cette entreprise.*

Keywords: Canadian Journal of Homoeopathy; homeopathy; bibliographic ghost; print culture

THE VICTORIAN MEDICAL PERIODICAL *Canadian Journal of Homoeopathy* (*CJH*) has never been analysed, owing to past difficulties in locating actual copies of it. Indeed, until recently, it was inescapable but to conclude that the *CJH* was what librarians, bibliographers, and book historians call a bibliographic ghost. The supposed existence of any publication based on evidentiary traces that appear only in secondary or tertiary printed sources without being substantiated by direct viewing or physically handling the primary document in question is such a "ghost."[1] This discussion, however, examines for the first time the context and content of this periodical devoted to Victorian medical reform, in particular the medical sectarian practice of homeopathy, in Canada West (previously identified as Upper Canada then later as Ontario), while situating its production and publication within other studies of print culture and medical journalism in Canada. Any possibility of labelling the journal a bibliographic ghost is dispelled, while reasons for its early demise are identified. This analysis further considers if the

 J. T. H. Connor, "Bibliographic Ghostbusting: The Evanescent Life and Spirited Times of the Canadian Journal of Homoeopathy (1856-57)," *Scientia Canadensis* 43, no. 1 (2021): 29-48.

CJH, despite its name, is even better described bibliographically not as a journal, but as a serialized pamphlet.

"No copy located": Tracing the trail of the CJH

Although Charles Roland and Paul Potter in their relatively exhaustive guide to Canadian medical periodicals in 1979 identify the *CJH*, other bibliographical details of this journal are scant and unhelpful as to its existence; for the volume run, their annotated bibliography reads "1--?...1856-?". Noted, however, is that the *CJH* editors were W.A. Greenleaf and A.T. Bull, and also that the journal came out of St. Catharines, which was in Canada West; the entry concludes with "No copy located."[2] Yet it is highly plausible to posit the publication of the *CJH* in Canada West during the mid-1850s, for this jurisdiction at this time experienced much public and professional activity related to the sectarian medical practice of homeopathy, as will be discussed. Thus, another possible avenue to aid in confirming the existence of the *CJH* is through other traces that might be found in contemporaneous medical journals, especially international homeopathic periodicals. In Canada, around 1856, only one medical journal existed: the *Medical Chronicle* or, *Montreal Monthly Journal of Medicine & Surgery*, which operated from 1853 to 1859. A close review of published issues for the years 1856 and 1857 reveals a total silence concerning the *CJH*, despite publishing much medical news and information from Canada West. A similar review of American and British homeopathic journals turns out to be helpful, however. *The North American Journal of Homœopathy*, based in New York City and launched in 1855, carried an announcement and an editorial assessment of the early issues of the *CJH*. It noted, in part, that the editors of the journal, Greenleaf and Bull, were located in Hamilton and London, respectively.[3] Likewise, the British *Monthly Homœopathic Review*, first published in 1857, not only ran a notice about the inaugural issues of the *CJH* noting they emanated from Hamilton and London, "C.W.," but also reprinted extracts from them.[4] Suffice it to say that these American and British journal items help transform the *CJH* from its ghostly form to an entity with somewhat more material substance.

A little more helpful is the National Library of Medicine (NLM) in Bethesda, Maryland. The institution began as a collection of books belonging to the US Surgeon-General in the early 1800s that then became the Army Medical Library (AML) in 1836 based in Washington, DC, but under the far-sighted and energetic leadership of Dr. John Shaw Billings (1838-1913) the organization considerably expanded its collections.[5] In particular, beginning in the early 1870s Billings undertook to collect copies of every medical periodical and publication, especially those originating in North America. Fortuitously, in 1872 US Army Surgeon Alden, who acted as an agent for Billings and the AML, contacted a Dr. A.T. Bull of Buffalo, New York. Alden informed Billings of the bibliographic fruitfulness of this meeting:

> I had better luck with the homeopath yesterday than I expected & send you by express tomorrow morning a box of pamphlets chiefly homeopathic & eclectic & quack. There

> are a good many things as you will see from the enclosed list that fill gaps in your files but there is a good deal besides. I thought best to send you all the duplicates as they were freely given & I fancy material of this kind may not be so easily obtainable as regular journals & they may be therefore useful for exchanges.[6]

We can be assured that the homeopath A.T. Bull of Buffalo is the same doctor who was founding co-editor of the *CJH* when he was based in London, Canada West in the mid-1850s. According to local London medical historian and physician Edwin Seaborn, Bull first practised homeopathy in London then relocated to Buffalo sometime after 1866.[7] It is reasonable to conclude, therefore, that in the "box of pamphlets chiefly homeopathic & eclectic & quack" were issues of the *CJH* that would be integrated into the extensive medical journal collection of the AML/NLM. Despite the assiduous efforts of Billings and his colleagues, the run of the *CJH* today in the NLM remains incomplete—worse, what "hard copy" issues that were collected sadly no longer exist except in microfilm; nevertheless their very existence, even if only in facsimile form, removes all doubt as to the materiality of the journal.[8] More fortuitous was the donation by physician-medical historian Edward C. Atwater in 1994 of his extensive collection of journals, books, and pamphlets and other ephemera all related to popular health and medical reform in the US to the University of Rochester Medical School. Among the thousands of items that catalogued was a bound volume of 176 pages constituting all issues of *CJH* for the year 1856. Also included was the title page for volume two commencing 1857, but without any of the actual issues themselves present.[9] More ghostbusting evidence exists in the two volumes of the *CJH* in The New York Academy of Medicine (NYAM). Like Atwater's, a volume of the *CJH* at the NYAM consists of all issues for 1856, while only the first three issues for 1857 comprise the second volume. When the NYAM, founded in 1847, might have acquired its holdings of the *CJH* has not been determined, but it certainly was before the mid-1960s.[10]

It remains curious that previous Canadian medical bibliographers did not extend their inquiries to include American institutions, to avoid categorical statements such as "no copy located" with respect to the *CJH*; yet it remains a fact that no original copies exist in Canada. Very recently, however, Canadiana online, the ultimate successor to the Canadian Institute for Historical Microreproductions (CIHM), has mounted digital copies based on the holdings of the NYAM thus permitting researchers, Canadian or otherwise, to get convenient and immediate access to what is believed to be the most complete journal run of *CJH*.[11] Based on copies of representative issues of the *CJH*, this discussion on the one hand unequivocally puts to rest any notion that the *CJH* was a bibliographic ghost. On the other hand, the repudiation of its spectral existence through analysis of its content raises another, different bibliographic question: Was it really a journal? Ought it to be characterized differently? Unlike almost all other medical journals in Victorian Canada which aimed to reach as broad a professional medical readership as possible, the *CJH* occupied a special double niche at a particular historical moment. As was often expressed in its pages, the *CJH* directed its

content to two readership groups, which included lay patients or "patrons," along with practitioners; uniting all was their interest in and commitment to homeopathy. That the *CJH* informed its readers was certainly true, which was an aim shared by all other medical journals. But the *CJH* also explicitly aimed to agitate through its advocacy campaign for the sectarian medical practice of homeopathy at the expense of "regular" doctors. "Regular" medical journals, too, often ran pointed and critical editorials concerning important issues of the day, but overall these periodicals did not function primarily to promote a particular partisan position. As such, the *CJH* was more akin to a medical pamphlet as explicated by Jennifer J. Connor. She explains how pamphlets, small printed booklets, "fulfil a particular rhetorical function that differentiates them from …other publications. …[T]he primary goal of medical pamphlets was to encourage or persuade readers to take a particular course of action."[12] In the history of medical journalism in Victorian Canada the only other periodical that closely resembled the *CJH* was *The Unfettered Canadian*. This appeared during the year of 1849 in Upper Canada with the aim of specifically promoting the botanically-based medical sectarian practice of Thomsonianism, which was embedded in the rhetorical discourse of political reform and action.[13] Although *The Unfettered Canadian* appeared for many published consecutive issues, Connor interestingly judges it to be less of a journal and more a "serialized pamphlet."[14] Contextualizing the *CJH* for the purposes of bibliographic studies, it may similarly be best described as a serialized pamphlet. Considering the *CJH* as a serialized pamphlet is also helpful for situating it more broadly within medical history. The demise of this periodical, as will be shown, can be readily attributed in great part to financial woes. Yet, it may be postulated that its life may have been evanescent, regardless. Pamphlets are written and published, typically, in response to an event, a crisis, or a political moment. But if the aims of a cause are achieved, then the need to persuade is diminished.

Homeopathy in 1850s Canada West and beyond

The appearance of the *CJH* in the mid-1850s maps to a period when the promotion of homeopathy was intensifying, not only in Canada but elsewhere. It was the organ of a cause; it was a pamphlet to promote and advocate for change. Briefly, based on the medical practice's founder the German physician Samul Hahnemann (1755-1843), the tenets of homeopathic medical practice included treating diseases and ailments with small pills or globules infused with extremely highly diluted tinctures—"infinitesimal doses"— of mineral and botanical compounds. These compounds under normal circumstances might induce symptoms in healthy persons of the disease under treatment; this belief was captured in the homeopathic maxim "like cures like." There was also the concept of a vital or life force that functioned in the human body; such an underpinning vitalist philosophical doctrine was not unique to medical therapeutic systems devised during the late-eighteenth and early nineteenth-centuries.[15] Critics of homeopathy such as "mainstream," "regular," or "allopathic" physicians dismissed it as lacking any rational foundation and that its treatments were useless; it was quackery. Its

proponents countered that homeopathy was a healthful alternative to aggressive medical measures such as excessive bloodletting and/or the administration of often dangerous drugs. Tensions and rivalries between members of opposing schools of medical thought existed, but the intense level of antagonism as often erupted in the United States was not to be found in Canada due, in part, to prevailing licensing legislation.

During the Victorian era, homeopathy was practised in what is now Quebec (previously Lower Canada, and then Canada East), but mostly in Montreal; the Maritimes less so, but it was found particularly in New Brunswick. Western Canada was not generally receptive to the medical sect. But it was in Canada West/Ontario, especially in the southwestern region that embraced the larger communities of Toronto, Hamilton, and London, along with their environs, that homeopathy flourished relative to other parts of Canada. In the early 1850s, the public might learn of homeopathy through practising homeopaths when lecturing at Mechanics Institutes and other similar educational venues. More likely, word was disseminated through reading and publishing pamphlets for lay audiences; such promotional activities, as already noted were usually partisan, if not polemical. Examples, more than likely paid for by their authors and usually printed and published by newspaper offices that also acted as job printers, are extant from the Maritimes, Quebec, and Canada West. For example, R.J. Smith of Toronto in his pamphlet of 1852 titled *Lecture on the History of Medicine and the Science of Homeopath*y expounded on the "vast difference" between homeopathy and regular or allopathic medicine. By invoking numerous nature similes and metaphors, Smith contrasted the violence of mainstream medicine with the gentleness of homeopathy: "Allopathy rushes over the organism like a volcano, or an avalanche exhausting all her resources; or, perhaps we may illustrate it by the tornado that tosses the mariner's bark so furiously upon the lap of the ocean, as to try, and strain, and crack every timber in her works." In comparison, Smith wrote, "Homeopathy carries on its curative operations with a stillness and quietness." By personifying nature, health, along with homeopathy, he continued that "[w]hen she is agonizing and writhing in her conflicts with disease, she needs not to be goaded on like the baited brute in the amphitheatre; but it is then she needs the well-timed and soothing aid of a modest friend."[16] Smith's style, approach, and arguments in favour of homeopathy resonated with editorials and articles that would be published in the *CJH*.

Assessing why exactly homeopathy began to gain popular and professional traction is complicated. Certainly for some practitioners and patients alike was the understanding that homeopathic treatment was safer than the "heroic" modalities of allopathic doctors who employed copious bloodletting and purging. Yet as both British and American historians of homeopathy have noted, other economic, social, gendered, and intellectual parameters were also probably at play in its adoption. Considering their work with respect to Canada is apposite as the uptake of homeopathy there was an amalgam of influences and trends that flowed from both the motherland and from its constantly churning neighbour

to the south. First, typically, it fell to the mother in a household to be concerned about the healthcare of her family, so perhaps not surprisingly women were disproportionately attracted to the purported gentler actions of homeopathy. Second, owing to the availability and active promotion of inexpensive domestic homeopathic medical kits consisting of a range of compounds for the treatment of common ailments, factors of convenience and economics no doubt also were considerations.[17] Finally, at a much more conceptual level was another possible justification, which might be roughly categorized as religious and spiritual, or more generally as metaphysical. Intellectual historians and historians of religion have commented on the cultural changes respecting organized religion in mid-Victorian Canada, especially its increasing democratization through American-style evangelism, along with other charismatic movements. At the same time long-held religious beliefs were being challenged by new scientific theories such as Darwinism. In sum, this was an era of intellectual flux. More specifically, as historian Ramsay Cook observed, in the 1850s in Canada, United States and Britain, "spiritualist activities had begun to arouse public interest. Spiritualist lecturers, like itinerant preachers on virtually every other subject from secularism to temperance, crossed the intellectually undefended border with increasing regularity."[18] It is feasible to posit that temperamental affinities existed between those who might begin to question traditional creeds on the one hand, while on the other hand might wish to explore new ways of thinking and acting, including the realm of medical treatment thus being persuaded to become believers and adopters of homeopathy—especially in light of the homeopathic notion of the existence and healthful role of a seemingly somatic but yet imperceptible vital spirit.

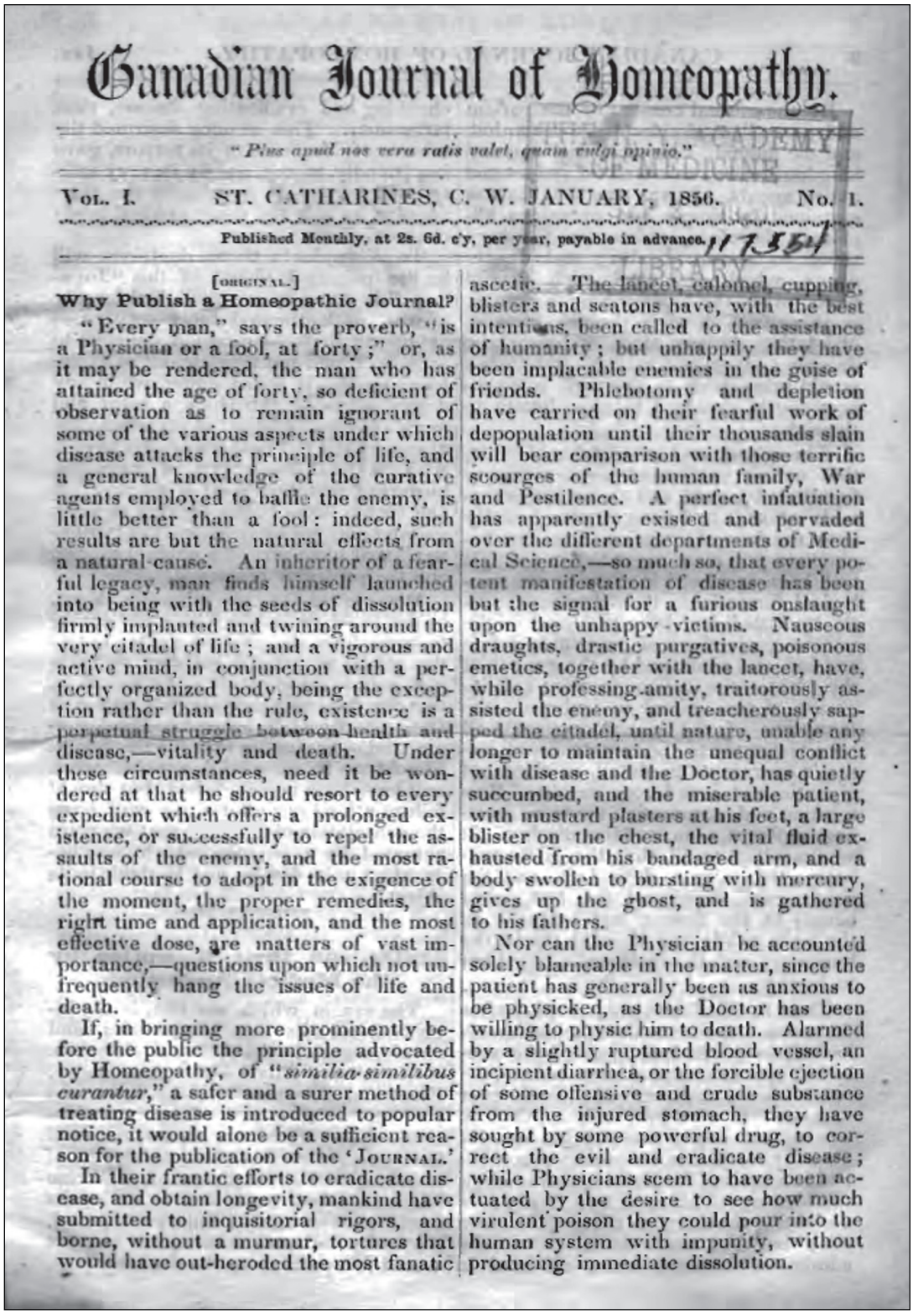
Certainly, the mind and body healing and cognate activities of Dr Susan Kilborn (1815-1868), are an instance. Born and raised in Stanstead, Canada East, Kilborn received her medical training first as an apprentice to Dr Moses Colby, also of Stanstead, then formally at Geneva Medical College in New York State; in the early 1860s she enrolled in courses at Boston's New England Female Medical College, which was a "regular" medical school but also one homeopathically oriented. In 1863, Kilborn became a faculty member at the New York Medical College and Hospital for Women, which became the most important site in America for the homeopathic training of women. According to her biographer the religious historian Marguerite Van Die, Kilborn's idiosyncratic blend of homeopathic healing and spiritualism is a prime example of "lived religion."[19] The medico-religious example of Kilborn, however, ought to be understood as the exception and not the rule. As medical historian S.E.D. Shortt has shown, established medicine at this time rejected spiritualism.[20] More important, contemporary homeopaths were similarly sceptical. Writing in the *North American Journal of Homœopathy* in 1860, the Canadian homeopath J.C. Peterson made clear that it was the duty of his colleagues to "purge homœopathy of all that borders upon the transcendental and mysterious."[21] Peterson was a sales agent and supporter of the *CJH*.[22]

The CJH and the push to organize and validate homeopathy

In 1854, the Homoeopathic Medical Society of Canada was founded; five years later twenty petitions representing 1,800 residents of Canada West/Ontario were presented to the Legislative Assembly in support of the official licencing of homeopaths. Legislation was processed speedily so that Royal Assent was granted on 4 May, 1859; this new act governed homeopathic educational and training standards. Among those now officially licensed to practice as of 13 June, 1859 were Drs. Alexander T. Bull (a medical graduate of New York University) and William A. Greenleaf (who graduated from Cincinnati Medical College).[23] A decade later saw new legislation along with the creation of a wholly different overarching governing medical body (the College of Physicians and Surgeons of Ontario in 1869) in the newly formed province, yet homeopathy continued to be officially recognized despite the relative numerical weakness of its doctors (in 1870 there were approximately 50 homeopaths relative to over 1,000 "regulars").[24]

The publication of the *CJH* in 1856 to 1857 in Canada West corresponds directly to the efflorescence of activities to organize and promote the homeopathic project there; the inauguration of the journal, then, can be seen as both a cause and effect of that process. Its appearance, too, in the Toronto-Hamilton-London corridor also makes sense based on its concentration of both homeopathic practitioners and supporters. More specifically, that St. Catharines was the initial *CJH* home base reflected not only the then residence of its co-editor W.A. Greenleaf, it also attested to that town's burgeoning commercial prosperity and growing reputation as a popular health resort owing to its mineral water spas.[25] But as noted in previously mentioned bibliographic annotations for the *CJH*, nearby Hamilton also became a place of record of its publication. Again, this connects with Greenleaf, for he later relocated to that larger city to establish a medical practice. A columnist with the nom de plume of Junius announced in the *St. Catharines Journal* in 1856 that "Dr. F.M. Havens (Homœopathist) is successor to Dr. Greenleaf, our esteemed friend, who has but recently removed to Hamilton; and who was greatly patronised, much respected, and highly esteemed by many here. We wish both, our friend Dr. Greenleaf in his new field of labor, and Dr. Havens in this his commencement of practice, many rewards and great posterity in their present spheres of usefulness."[26]

Visual examination of the *CJH* [**Fig. 1**] further adds to our historical understanding of it as a printing and publishing artifact, which is also contextually significant. In almost all respects it resembled other medical journals of the day in format and structure, as early volumes show, but initially it had fewer pages (around eight) than other similar publications. Each issue was octavo size (approximately 6" by 9") with two separate columns of text on the page, although later issues would replace that format by having text run the full width of the page. The journal title was set in large Black Letter font similar to that used in many newspapers' mastheads. Running under this was a quotation in Latin: *Plus apud nos vera ratio valet, quam vulgi opini*, which translates as "for us true reason has more weight than popular opinion." This not wholly accurate excerpt origi-



Canadian Journal of Homœopathy.

"Plus apud nos vera ratio valet, quam vulgi opinio."

VOL. I. ST. CATHARINES, C. W. JANUARY, 1856. No. 1.

Published Monthly, at 2s. 6d. c'y, per year, payable in advance.

[ORIGINAL.]

Why Publish a Homeopathic Journal?

"Every man," says the proverb, "is a Physician or a fool, at forty;" or, as it may be rendered, the man who has attained the age of forty, so deficient of observation as to remain ignorant of some of the various aspects under which disease attacks the principle of life, and a general knowledge of the curative agents employed to baffle the enemy, is little better than a fool: indeed, such results are but the natural effects from a natural cause. An inheritor of a fearful legacy, man finds himself launched into being with the seeds of dissolution firmly implanted and twining around the very citadel of life; and a vigorous and active mind, in conjunction with a perfectly organized body, being the exception rather than the rule, existence is a perpetual struggle between health and disease,—vitality and death. Under these circumstances, need it be wondered at that he should resort to every expedient which offers a prolonged existence, or successfully to repel the assaults of the enemy, and the most rational course to adopt in the exigence of the moment, the proper remedies, the right time and application, and the most effective dose, are matters of vast importance,—questions upon which not unfrequently hang the issues of life and death.

If, in bringing more prominently before the public the principle advocated by Homeopathy, of "*similia similibus curantur*," a safer and a surer method of treating disease is introduced to popular notice, it would alone be a sufficient reason for the publication of the 'JOURNAL.'

In their frantic efforts to eradicate disease, and obtain longevity, mankind have submitted to inquisitorial rigors, and borne, without a murmur, tortures that would have out-heroded the most fanatic ascetic. The lancet, calomel, cupping, blisters and seatons have, with the best intentions, been called to the assistance of humanity; but unhappily they have been implacable enemies in the guise of friends. Phlebotomy and depletion have carried on their fearful work of depopulation until their thousands slain will bear comparison with those terrific scourges of the human family, War and Pestilence. A perfect infatuation has apparently existed and pervaded over the different departments of Medical Science,—so much so, that every potent manifestation of disease has been but the signal for a furious onslaught upon the unhappy victims. Nauseous draughts, drastic purgatives, poisonous emetics, together with the lancet, have, while professing amity, traitorously assisted the enemy, and treacherously sapped the citadel, until nature, unable any longer to maintain the unequal conflict with disease and the Doctor, has quietly succumbed, and the miserable patient, with mustard plasters at his feet, a large blister on the chest, the vital fluid exhausted from his bandaged arm, and a body swollen to bursting with mercury, gives up the ghost, and is gathered to his fathers.

Nor can the Physician be accounted solely blameable in the matter, since the patient has generally been as anxious to be physicked, as the Doctor has been willing to physic him to death. Alarmed by a slightly ruptured blood vessel, an incipient diarrhea, or the forcible ejection of some offensive and crude substance from the injured stomach, they have sought by some powerful drug, to correct the evil and eradicate disease; while Physicians seem to have been actuated by the desire to see how much virulent poison they could pour into the human system with impunity, without producing immediate dissolution.

Figure 1. ***Canadian Journal of Homeopathy.*** *Canadiana.ca http://www.canadiana.ca/view/oocihm.8_06806_1/1?r=0&s=1*

nated from the writings of the first century BCE Roman orator Cicero, but would be recognizable to many genteel and literate persons of the Victorian era—a segment of polite society that homeopathic practitioners frequently favoured and actively courted.[27] Not only did such a quotation add an air of learning to the journal, it also set the tone and agenda for the *CJH*: the "true reason" of homeopathy carried more weight than the collective opinions of those who ridiculed or criticized it, i.e. "regular" doctors.

Although initially not excessively strident in its advocacy, the overt polemical nature of the *CJH* cannot be dismissed: its introductory article titled "Why Publish a Homeopathic Journal?" was both a prospectus and a call to arms. Although unsigned but identified as "original" to the *CJH*, this essay presumably was the work of Greenleaf: "If, in bringing more prominently before the public the principle advocated by Homeopathy, of "similia similibus curantur," [like cures like] a safer and surer method of treating disease is introduced to popular notice, it would alone be a sufficient reason for the publication of the 'Journal.'"[28] What followed was the familiar critical refrain of the shortcomings and dangers of mainstream medical practices, along with patients' failure to reject them:

> The lancet, calomel, cupping, blisters and setons have, with the best intentions been called to the assistance of humanity, but unhappily they have been implacable enemies in the guise of friends. Phlebotomy and depletion have carried on their fearful work of depopulation until their thousands slain will bear comparison with those terrific scourges of the human family, War and Pestilence....Nor can the Physician be accounted solely blameable in the matter, since the patient as generally been anxious to be physicked, as the Doctor has been willing to physic him to death.[29]

It was therefore to be the "principal object" of the *CJH* to disseminate the doctrines of homeopathy "largely in well authenticated facts,—FACTS, —"stubborn facts," which bid defiance to argument…if we save but one victim from being hurried through poison to an untimely grave, the 'JOURNAL' will have served a noble purpose, and the publisher rewarded."[30] Most of the remaining original articles in this and subsequent issues were similar with titles such as "Truths, and their Reception by the Medical Profession," "Homeopathy Weighed in the Balance," and "What is Homeopathy?". Other printed matter was excerpted and reprinted from both American and British homeopathic journals. The overall nature of the *CJH* was ably captured in a brief review in the *North American Journal of Homœopathy*, noting it was "rather a popular than a strictly medical Journal. …Still its articles are always well written, its selections good, and its whole tone is gentlemanly and literary."[31]

To be considered the producer of a "gentlemanly and literary" journal likely greatly satisfied Greenleaf, for such terms may be interpreted in the understanding of the times as less gendered and more professional or being of suitable status.[32] But is it possible to gauge the appeal and measure the success of *CJH* as a publishing venture? In her analysis of Victorian medical journals in Canada, Jennifer J. Connor concludes that costs, logistics, and editorial demands associated with such periodicals could be complicating and taxing. So much so, that

the publication life cycle from birth to death was often short as promoters run out of money, material, and personal energy.[33] Her research prompts several fundamental question regarding the *CJH*: How was it produced and distributed? How did it function? What was its readership? Were there many subscribers? Might other sources of income sustain it? What was its eventual fate based on the bibliographical rarity of surviving issues? It is possible to sketch answers to these questions through examination of details contained in the *CJH* that medical historians typically might ignore but which are helpful to book and print culture historians. When based in St. Catharines, the journal was typeset and produced in the printing office of H. Leavenworth.[34] Hiram Leavenworth (1797-1857) was an American who migrated from upstate New York to the Niagara region in the early nineteenth century; he would be among the first cohort of printers in Upper Canada, and he produced the *Colonial Advocate* newspaper for William Lyon McKenzie in Queenston (although it was likely first printed in New York by Leavenworth).[35] That Leavenworth was one of the most experienced printers in Canada West is indisputable, which probably accounts for the general quality and lack of printing errors or spelling mistakes in the *CJH*. It is possible, however, that the actual printer was his son, H.F. Leavenworth, who took over the print shop from his ailing father around the time of the first issues of the *CJH*.[36]

Distribution of the *CJH* was through booksellers, specialty pharmacies, and a network of subscription agents who were also homeopathic physicians. In St. Catharines, issues of the *CJH* could be purchased from the two bookshops of Barr & Thompson's and Walker's; further afield they could also be had in Hamilton at the homeopathic pharmacy of Dr A.N. Woolverton who also practiced homeopathy in Philadelphia at the well-known homeopathic pharmacy (and publisher) of Boericke & Tafel.[37] Similarly, homeopaths practising in Canada West in Beamsville (McLean), Port Colborne (Carter), Hamilton (Peterson), Woodstock (Ferguson), London (Bull), Toronto (Adams), and Newmarket (Codey) were authorized to gather the annual subscription fee of two shillings and six pence. A number of complimentary copies also were sent to "our friends whom we have not communicated. Should they desire it, they will please inform us before the time of publishing the second No." However, the publisher/editor craved the "indulgence" of these same friends for the lateness of the appearance of this first issue; the "next No. will be issued in better season," Greenleaf assured readers.[38]

Issue number two (February, 1856) ran to twenty pages, signalling considerable growth; indeed, the editorial titled "Prospects of Success" confirmed this. "It is with feelings of satisfaction," Greenleaf wrote in it "that we send the second No. to our patrons enlarged and otherwise improved." One improvement was the accession of Dr. Alexander T. Bull of London as a co-editor and publisher, which would aid in making the "Journal interesting, instructive and popular." An invitation was extended to "our Medical Friends" to contribute "carefully written articles, illustrative of the principles of Homeopathy…and the success of the cause of Medical Reform in your vicinity." More pointedly and practically, "do not relax your efforts to extend the circulation of the Journal [Greenleaf exhorted]; for I scarcely need remind you, that our interests are common, with this

exception, that we have the labor of publishing without remuneration, (beyond the cost of printing and paper) while you have the pleasure of seeing the cause increase in your midst. So send on subscribers, not forgetting the 'material aid,' and we will try to furnish you an equivalent."[39] And send them on they did from Canada West and Canada East. Twelve physicians were identified who had submitted remittances for journal subscriptions from 242 persons; Dr. A.T. Bull himself, accounted for 150 of them. In addition, another 76 were sent from individual subscribers, including several women (identified as "Mrs."—as noted, many women were attracted to homeopathy as its methods were considered more suitable for them and their children).[40] Such metrics, while basic, are revealing as it is often difficult to ascertain how many subscribers any Victorian medical periodical might have had; but with over 300 remittances/readers, the *CJH* may be deemed to have been successful. Moreover, we can infer that a good number of them came from the general lay public as at no time were there that number of practicing homeopaths in Canada. In sum, the *CJH* fulfilled its dual objective of appealing to popular audience (both male and female) and to a professional one (overwhelmingly male).[41]

Yet there were problems of distribution beyond the control of the publishers/editors. Letters complaining that the January issue had not been delivered to some subscribers had been received; in response, somewhat plaintively, was the reply: "We mailed carefully, a copy to the address of each of those, whose names we had, at the time of publishing."[42] There is implicit here the enduring lament of blaming the vagaries of the postal service for mail gone astray, but the time and effort to presumably handwrite address labels, package issues, affix postage stamps, and then transport all to a post office must have been appreciable. (Perhaps an advantage for Greenleaf was that during the early 1850s the St. Catharines's postmaster was also jointly a bookseller and a stationer.[43]) And that in addition to many of the other behind-the-scenes tasks he had to undertake in addition to writing, conveying and collecting copy to and from the printing office, proofreading, accounting, and promotion and marketing duties.

Revenue, in addition to subscribers' payments, possibly flowed to the journal from its advertisers. Ads in medical journals were not uncommon; those in the *CJH* primarily took the form of professional calling cards announcing a physician's location and hours of office practice. Pharmacies also advertised noting the compounds and other items they prepared and stocked, with business from Canada (Hamilton) and the United States (Philadelphia, and New York City) being represented. Without exception physicians and pharmacies alike were homeopathic in orientation. Also appearing were larger display ads for American medical colleges such as the Pennsylvania Homeopathic Medical College in Philadelphia and the Western Homeopathic College in Cleveland, Ohio. Information was conveyed to prospective students about the length of courses and terms, fee structures, and who comprised the faculty. The numbers of ads steadily increased over time, especially those for American businesses, suggesting, on the one hand, an increasing professional profile for the *CJH*. On the other

hand however, it also might be interpreted that funds from ads were increasingly becoming more of a necessity to support the journal. Another change was the shift in publication from St. Catharines to Hamilton, beginning with the fourth issue in April 1856, which was a result of a personal decision by Greenleaf to leave his rural practice for an urban setting owing to his health. His country practice had been successful yet his long travels in "continued exposure to the storm and wet" now fatigued him: "A physician, to endure a country ride, should receive the most severe physical training from his youth up, or he will find a few years will make him a wreck of what he otherwise would be."[44]

The content and tenor of the journal, too, changed with successive issues containing fewer original contributions by its co-editors, or by Canadian homeopathic authors; pages were increasingly filled with reprinted material from American and British sister journals, which while informative, may perhaps not have appealed to all readers. Never the less by mid-year, Greenleaf expressed his satisfaction with the progress and success of the *CJH*, thus he expressed his thanks to all those who had supported it; but a "paper cannot be published in this country without it has the 'sinews of war.' The low price at which it is afforded requires a good list of patrons to sustain it in its present form…."[45] Later in 1856, a new feature of the journal was its role in communicating the meeting activities of the Homeopathic Medical Society of Canada, of which Greenleaf was Secretary. The report for the semi-annual meeting held in Woodstock in September 1856 carried news of new members elected, the censuring of one doctor who had brought "reproach upon Homeopathy," and a decision to procure a seal for the Society. Although the *CJH* was not formally connected to the Society, a printing committee was struck (consisting of Drs. Greenleaf, Bull, and Ferguson), along with a resolution that Greenleaf and Bull continue publishing the journal for another year—all suggesting a tighter link between the Society and the periodical.[46] December marked the conclusion of the first year of publication, which was acknowledged as a success by any measure. The principles and practice of homeopathy had been explained and promoted unceasingly in the pages of the *CJH*, but "it is not time for us to relax our energies, but to follow our past successes with renewed efforts until the principles of medical reform are known and followed throughout the length of this prosperous province. The press is the only means by which correct principles can be rapidly disseminated" Greenleaf exclaimed. Of course, there was a real cost to promoting medical reform, thus journal subscriptions were to rise to one dollar annually beginning in 1857. "We do not expect to grow rich by this publication," Greenleaf continued, "yet we hope we receive enough to pay the printer, leaving out remuneration to the editor; hence, every physician has as much interest in sustaining the Journal as the publishers themselves, as they desire no benefit but such as is common to all our practitioners."[47]

The CJH, medical reform, and the "Medical Monopoly"

The raison d'être of the *CJH* was, of course, to promote homeopathy: the Latin quotation that was part of the initial journal masthead signalled this, as did earlier editorials that referred to the failings of "regular" doctors, along with the need to support the "cause of Medical Reform." All articles, whether original or reprinted, focussed on homeopathic medical practice; similarly all the ads. Yet, particularly in the issues that constituted the second volume (1857), there was a more readily detectable belligerent position towards "regular" or "old school" medicine in whatever original editorial matter that did appear, with the register or tenor of the discourse becoming more pronounced and adversarial—it became, overall, less "gentlemanly." "IS HOMEOPATHY PRACTICABLE?" pithily queried the first editorial of 1857. The not so concise one-sentence response exhorted readers that "We would not ask that our own ipse dixit be taken as proof, but could point the enquirer to the accumulated and constantly augmenting evidence of a multitude of competent and scientific observers, extending over a space of half a century forming a mass of evidence that would make a question of fact doubly conclusive, and to patients and patrons, now numbered by millions, who will cheerfully add their grateful testimony to a truth that has been full of life and joy to them and theirs."[48] And, in conclusion:

> The principles of homeopathy, we venture to premise, will not be considered impossible by any unprejudiced reasoner. …The truth of the power of small doses is already sustained by a mass of evidence such as never supported any system of medicine before, and is daily increasing with the development of the science. We can venture to say, that no physician of the old school who would examine the amount and nature of the evidence afforded, could excuse their neglect of a fair, faithful, and impartial examination.[49]

Physicians of the old school were thus characterized as biased, close-minded, and unscientific. More ammunition for attacks by the homeopathic organ became readily available, because in addition to these perceived faults, members of the old school in Toronto at this time had descended into complete organizational and professional disarray to reveal how riven they were. It is well documented that the mid-1850s were tumultuous times for medical education in that city due to medical school faculty mutinies and defections grounded in intense institutional competition in addition to religious and political partisanship; this internal strife and manoeuverings became public knowledge through newspaper reports and legal inquiries. Briefly, at the heart of the matter were independent proprietary medical schools whose instructors derived remuneration from tuition fees; thus poaching students to increase enrolment was not uncommon. Moreover, as one medical school might be Anglican/Tory in orientation, another Methodist, and another Reform-minded, these institutions became local battlegrounds for larger, long-ongoing feuds. One catastrophic case that may be considered exemplary of the fallout of such enmities was the death of a patient at the hands of two students from competing "regular" medical schools, with faculty both from institutions defending the actions of its student during the inquest, while condemning those of the other. Commenting on the tragedy, George Brown, editor/publisher of

the Toronto newspaper, *The Globe*, wrote that "Were we writing a theme in favour of homeopathy..., we could not desire a better text. …[H]ow many do the rest of the regular profession kill in the city and throughout to province?"[50] The administration and the activities of the Toronto General Hospital were also greatly compromised at this time due to the machinations of "regular" medical men.[51]

Quoting liberally and somewhat gleefully from another contemporary newspaper article about the medical school debacle, the *CJH* made sure its readers were fully acquainted with the matter, while also adding its own caustic commentary. Using much punning and extended metaphors, it noted that "'With feelings of disgust,' the *Hamilton Banner*…approached the 'subject' of Medical Schools in the Western Province. Whether this disgust was caused from the cadaverous odor that would naturally arise from bodies so long defunct, or the association of the subject with pills, powders, and blisters, he does not inform us." None the less, "Two [medical schools] have passed through the sickening, decline, and pangs of mortality to a premature end. Atrophia famelicorum [emaciation due to lack of mother's milk] appears to have been the cause of their early demise, hastened, no doubt, by the remorse excited in an over sensitive conscience for their culpable conduct…. That old school medicine needs help, just as Peter did when sinking into the waves, is quite evident." Continuing with the trope of the body, while attacking the possibility of government intervention to ameliorate the old school's condition that might be at the expense of homeopathy, the editorial continued:

> To foster weak and infant institutions, the objects of which are good, by legislative aid, consistent with public justice and individual rights, is no doubt highly commendable; but what must we think of the allopathic profession, coming forward in the strength of mature manhood, aided by age and experience, standing and popularity, and asking for exclusive privileges and government aid to be used for the support of a clique or association, who from the weakness incident to human nature or selfish motives, will deliberately sustain medical error sooner than admit the fallibility of their confrerie?[52]

In the following issue of March 1857, there appeared another scathing editorial titled "The Medical Monopoly;" accompanying was a lengthy extracted article from *The Globe*, which also excoriated the "allopathists" while showing sympathy for the tenuous position of the rival "homoeopathists."[53] The root problem was the presence and nefarious activities of one "Dr." Francis Tumblety. Without doubt, Tumblety the "Celebrated Indian Herb Doctor," was a quack, a charlatan, and a snake oil salesman supreme — even contemporary "regular" and homeopathic doctors all agreed on that; current historical analysis confirms this, along with the charge that he was likely also an abortionist and perhaps Jack the Ripper![54] When he began peddling his wares in Canada West, a regular physician brought a suit against him for the illegal practice of medicine as he was unlicensed by the provincial Medical Board, but under the same law so too could any "respectable" homeopathic practitioner be sued, *The Globe* noted. "There is no difference between the two parties in the eye of the law. Both parties have given medicine without licence, and are equally answerable" it continued. As this was a matter of principle,

> All who will not go before a Board composed of old school physicians and submit to the views propounded there, must be punished by fine and imprisonment if they give advice and take a fee. We feel convinced that by making this demand, the regular profession will incur unpopularity, and will gain nothing. It is quite impossible to put bonds on a sick man and say, this person only you must consult, and no one else.[55]

According to the *CJH*, *The Globe* column contained "more good sense than all medical laws that were ever enacted." Yet, given the demands and constraints of the law, the "only course open to medical reformers, those who are convinced of the fallacy of old school [sic], and are humanely laboring to maintain a more safe and rational mode of medical treatment, is to submit to the punishments of a disgraceful statute enforced by the malice of jealous minds, and hope for better and more enlightened enactments."[56]

The close timing of the medical school imbroglio and the Tumblety affair provided plenty of editorial fodder respecting medical reform, but the *CJH* had its own internal publishing concerns. In early 1857, it noted that the "enterprise of sustaining a periodical devoted to the interests of medical reform" was both new and difficult. Again, the lament was made that all labour was without "direct remuneration" for the time devoted thus it was hoped "friends of the cause will not think us exacting too much in asking their aid in its support."[57] Likely this was a hint that revenue was less than expenses incurred, if so it explains why the *CJH* increased the number of those who were subscription agents to include all homeopathic practitioners in the province, along with representation in New Brunswick, New York, Massachusetts, Pennsylvania, and Ohio.[58] But the writing was not only on the wall, it also appeared in print. "An Apology and an Appeal" was a blunt notice to *CJH* readers that the journal was headed for trouble due to a monetary shortfall and what might be termed editor burnout. The March issue had appeared one month late owing to the editor's failure to follow up on the task of production as the time devoted was in "such moments as we can snatch from our professional engagements….[W]e have been quite unable to give much attention to its publication, and less to seeing it properly and carefully mailed." Worse, as many subscribers were many months in arrears the journal's future was in real jeopardy. "Now, we are not agoing to dun…but we wish to intimate to those who receive and read the Journal, and to those who are interested in its prosperity and circulation, that we shall not continue it unless it is pecuniarily [sic] sustained." The editor, W.A. Greenleaf, made his and the journal's precarious situation clear:

> We expect no pecuniary gain from its publication; neither are we willing to submit to pecuniary loss further than the time we may devote in arranging it for publication. We have no ambition to gratify, or personal end to serve other than the common interest of all homeopathic physicians and the advantage of the patrons of the homeopathic practice. So that if we are compelled to discontinue, which we trust will not be the case, we shall have no more regret than many who have taken a deep interest in the Journal from its commencement.[59]

Despite the claim that the April issue would be ready for mailing later in that month, the issue of March 1857 would mark the final appearance of the *CJH*.

A diagnosis of Atrophia famelicorum also could be deduced for the *CJH*, as the wasting away due to insufficient funds and editorial energy proved fatal. Such a short life cycle might not be unusual for Canadian medical journals in general, as Jennifer J. Connor has noted. The pressures of publication, typically borne by one person, often turned out to be too exhausting leading to the early demise of the enterprise.[60] While this prognosis and premature death might be contextualized as perhaps not unexpected as was the case of numerous other medical journals whether "regular" or not, the *CJH* ought still to be understood as still one of special interest. As noted, the spirited times the *CJH* was a part of culminated in the official medical licensing of homeopaths in Canada West/Ontario. After the passage of that act, the *CJH* might have continued, but in many respects its raison d'être was removed; the battle it fought for had been won. From the point of view of the "regular" medical profession, homeopathy might still haunt society; but the cause of medical reform became bereft of its spirit. Analysis of the *CJH* can also be contextualized within the broad field of medical publishing and technical communication in general in Victorian Canada. Without assigning priority or importance to any single genre, a spectrum can be envisaged: at one end, are medical textbooks and specialized monographs written by and published expressly for the medical profession, while at the other end one could assign books that, although usually were written by doctors, were geared for lay audiences, and included domestic and self-help family medical manuals.[61] Close to medical textbooks would be professional medical journals, while pamphlets for a popular audience can be placed close to domestic medical literature. And now that it has been possible to characterize the *CJH*, it may be placed near the middle of the spectrum, as Janus-like, it faced both ways.

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Note: *Regarding terminology and spelling, the œ diphthong was traditionally used in continental Europe and Britain when spelling "homœopathy;" occasionally, the spelling would include the sequence "oeo," but without the diphthong. In the United States, both forms of spelling might be used, but typically the diphthong was dropped, as was also the initial "o" in "oeo," thus "homeopathy" was the usual American spelling. Due to the infiltration of both American and British influences on the growth of this medical sectarian practise, Canadian spellings fluctuated with all forms being found to be in use. In the present discussion, the spelling will conform exactly to that of the book or journal title or actual direct quotation of the time. In the main body of the text however, "homeopathy" will be used for consistency.*

Endnotes

1 Roy Stokes, *A Bibliographic Companion* (Metuchen, NJ and London: Scarecrow Press, 1989), 127-8.

2 Charles G. Roland and Paul Potter, *An Annotated Bibliography of Canadian Medical Periodicals, 1826-1975* (Toronto: Hannah Institute for the History of Medicine, 1979), 19. To support such information, Roland and Potter point readers to the 1934 publication *A Bibliography of Canadian Medical Periodicals with Annotations* by H. E. MacDermot, a Montreal physician who was also a noted amateur medical historian, along with being an editor of the *Canadian Medical Association Journal*. But the informational relationship between these two bibliographies regarding the *CJH* is circular, for MacDermot's reference to the *CJH* notes only "St Catharine's, Ont. [sic] v. 1, 1856 +;" see, H. E. MacDermot, *A Bibliography of Canadian Medical Periodicals with Annotations* (Montreal: McGill University and Renouf Publishing Company, 1934), 16. One suspects, too, that MacDermot did not have access to or was able to locate an original copy of *CJH*, as he did not include an annotation to this entry which was the case with other listings in his *Bibliography*. The only hint as to where MacDermot learned of the *CJH* is reference to both the *Union Serial List* [*in Libraries of the United States and Canada*] first published in 1913 and the "Surgeon-General's Catalogue." Also unhelpful is Julian Winston's *The Heritage of Homœopathic Literature: An Abbreviated Bibliography and Commentary* (Tawa, New Zealand: Great Auk Publishing, 2001), for this recognized historian of homeopathy in an otherwise definitive international reference guide makes no mention whatsoever of the *CJH*. Even as recently as January 2020, David Crawford in his current online *Bibliography of Canadian Health Sciences Periodicals 1826-1980* adds little to what was already known, noting "v.1 - v.2:3, St. Catharine's, Ont., January 1856 - March 1857. Editors: W.A. Greenleaf and A.T. Bull. WorldCat catalogues this title as *Canadian Journal of Homeopathy* (sic) and states that some issues were published in Hamilton" available at http://internatlibs.mcgill.ca/bibliography/introduction.htm

3 "The Canadian Journal of Homœopathy," *North American Journal of Homœopathy* 5 (1857): 294.

4 "The Canadian Journal of Homœopathy," *Monthly Homœopathic Review* 1 (1857): 484.

5 On the interconnected activities that constituted Billings's career, see: Carleton B. Chapman, *Order Out of Chaos: John Shaw Billings and America's Coming of Age* (Boston: Boston Medical Library in the Francis A. Countway Library of Medicine, 1994); James H. Cassedy, *John Shaw Billings: Science and Medicine in the Gilded Age* (Bethesda, MD: Xlibris Corporation, 2009); Michael G. Rhode and J.T.H. Connor, "'A repository for bottled monsters and medical and curiosities': The Evolution of the Army Medical Museum" in *Defining Memory: Local Museums and the Construction of History in America's Changing Communities*, Amy K. Levin and Joshua G. Adair, eds., (Lanham, MD: Rowman & Littlefield, 2017), 175-92; R.S. Henry, *The Armed Forces Institute of Pathology - Its First Century 1862 -1962* (Washington, DC: Office of the Surgeon General, Department of the Army, 1964); Paul Stone, *Legacy of Excellence: The Armed Forces Institute of Pathology, 1862-2011* (Fort Detrick, MD: Borden Institute, US Army Medical Department, 2011); Edgar Erskine Hume, "The World's Largest Medical Library: The Army Medical Library of Washington," *The Johns Hopkins Alumni Magazine* 24 (January 1936): 106-35; Various authors, *The One Hundredth Anniversary of the Army Medical Library, Washington, DC, 1936* (Washington, DC: [Army Medical Library,]1936); Wyndham D. Miles, *A History of the National Library of Medicine: The Nation's Treasury of Medical Knowledge* (US Department of Health and Human Services, Public Health Service, National Library of Medicine, 1982); and Michael Sappol, ed., *Hidden Treasure: The National Library of Medicine* (Bethesda, MD and New York, NY: National Library of Medicine and Blast Books, 2012).

6 Miles, *History of the National Library of Medicine*, 59.

7 Edwin Seaborn, *The March of Medicine in Western Ontario* (Toronto: Ryerson Press, 1944), 199.

8 Issues of vol. 1, no. 3, 8, and 10 (1856) are available on microfilm from the NLM.

9 Christopher Hoolihan, comp., *An Annotated Catalogue of the Edward C. Atwater Collection of American Popular Medicine and Reform, vol. I: A-L*, (Rochester, NY: University of Rochester Press, 2001), 63.

10 See, *Union List of Serials in Libraries of the United States and Canada* (New York: H.W. Wilson, 1965), Vol 2, 911, cited in Hoolihan, ibid.

11 Émilie Lavallée-Funston (Member Services and Licensing Officer, Canadian Research Knowledge Network [CKRN], Ottawa), email to author, 20 February, 2020. I am most grateful for the vitally helpful assistance received from *Canadiana* online/CKRN. Facsimile copies of issues of vol. 1 (1856) nos. 1-10 and 2 (1857) nos. 1-3, are now mounted on *Canadiana* online http://www.canadiana.ca/view/oocihm.8_06806_1/1?r=0&s=1.

12 Jennifer J. Connor, "The Medical Pamphlet and Pamphleteering in Canada," *Papers of the Bibliographical Society of Canada* 32, no. 2 (1994): 87-119; see p. 87. For her analysis of homeopathic pamphlets, see pp. 95-6.

13 Jennifer J. Connor and J.T.H. Connor, "Thomsonian Medical Literature and Reformist Discourse in Upper Canada," *Canadian Literature* 131 (Winter 1991): 140-55; see also, Jennifer J. Connor, "Thomsonian Medical Books and the Culture of Dissent in Upper Canada," *Canadian Bulletin of Medical History* 12 (1995): 289-311.

14 Connor, "The Medical Pamphlet,"96-7.

15 On the origins of homeopathy, see Alice K. Kuzniar, *The Birth of Homeopathy Out of the Spirit of Romanticism* (Toronto: University of Toronto Press, 2017).

16 This synopsis is based on J.T.H. Connor, **"**Homoeopathy in Victorian Canada and its Twentieth-century Resurgence: Professional, Cultural and Therapeutic Perspectives," in *Culture, Knowledge and Healing: Historical Perspectives of Homeopathic Medicine in Europe and North America*, eds. Robert Jütte, Guenter B. Risse and John Woodward (Sheffield: European Association for the History of Medicine and Health Publications, 1998), 111-3; see also J.T.H. Connor, "'A sort of *felo-de-se*': Eclecticism, Related Medical Sects and Their Decline in Victorian Ontario," *Bulletin of the History of Medicine* 65, no. 4 (1991): 503-527. For additional context, see Martin Kaufman, *Homeopathy in America: The Rise and Fall of a Medical Heresy* (Baltimore: Johns Hopkins University Press, 1971) and Norman Gevitz, ed., *Other Healers: Unorthodox Medicine in America* (Baltimore: Johns Hopkins University Press, 1988).

17 On these and other strictly non-therapeutic issues related to the adoption of homeopathy, see Anne Taylor Kirschmann, *A Vital Force: Women in American Homeopathy* (New Brunswick, NJ: Rutgers University Press, 2004); and various essays in Martin Dinges, ed., *Patients in the History of Homoeopathy* (Sheffield: European Association for the History of Medicine and Health Publications, 2002), in particular, Phillip A. Nicholls, "Class, Status and Gender: Toward a Sociology of the Homoeopathic Patient in Nineteenth-Century Britain," 141-56.

18 For the context of changes in organized religion and intellectual thought at this time, see: William Westfall, *Two Worlds: The Protestant Culture of Nineteenth-Century Ontario* (Montreal: McGill-Queen`s University Press, 1989); Michael Gauvreau, "Protestantism Reformed: Personal Piety and the Evangelical Social Vision, 1815-1867," in *The Canadian Protestant Experience, 1760-1990*, ed. George A. Rawlyk (Montreal: McGill-Queen's University Press, 1990), 48-97; and A.B. McKillop, *Contours of Canadian Thought* (Toronto: University of Toronto Press, 1987), especially ch. 5, "Science, Ethics, and Poetic Fancy." See also, Ramsay Cook, *The Regenerators: Social Criticism in Late Victorian Canada* (Toronto: University of Toronto Press, 1985), 66.

19 Marguerite Van Die, "Practicing Medicine and Spiritualism in the 1860s: Sacred Encounters of Drs. Moses Colby and Susan Kilborn as 'Lived Religion,'" *Histoire Sociale/Social History* 42, no. 84 (2009): 447-78.

20 S.E.D. Shortt, "Physicians and Psychics: The Anglo-American Medical Response to Spiritualism, 1870-1890," *Journal of the History of Medicine and Allied Sciences* 39, no. 3 (1984): 339-55.

21 J.C. Peterson, "On the Dissentions between the Schools," *North American Journal of Homœopathy* 9 (1861): 308-12, at p. 309.

22 For much broader analyses on historical connections between medicine, health, healing, religion, transcendentalism, and the metaphysical in nineteenth-century North America, see: Robert C. Fuller, *Alternative Medicine and American Religious Life* (New York: Oxford University Press, 1989); Catherine L. Albanese, *Nature Religion in America: From the Algonkian Indians to the New Age* (Chicago: University of Chicago Press, 1990); James Opp, *The Lord for the Body: Religion, Medicine, and Protestant Faith Healing in Canada, 1880-1930* (Montreal and Kingston: McGill-Queen's University Press, 2005), and Patricia Jasen, "Mind, Medicine, and the Christian Science Controversy in Canada, 1888-1910," *Journal of Canadian Studies* 32, no. 4(Winter 1997-1998): 5-22.

23 See "Medical Licences issued in Ontario and Quebec prior to 1867," available at https://internatlibs.mcgill.ca/Licences/Medical%20Licences.htm *s.v.* Bull and Greenleaf.

24 Connor, "Homoeopathy in Victorian Canada," 121.

25 A contemporary promotional pamphlet account is E.W. Stephenson, *The Medical Properties of the St. Catharines Mineral Waters* (St Catharines: H.F. Leavenworth's "Herald" Power Press, 1864). Historical analyses include J.T.H. Connor, "Preservatives of Health: Mineral Water Spas of Nineteenth -Century Ontario," *Ontario History* 75, no. 2 (1983): 135-52; and Lynne Prunskus, *The Last Resort: Spa Therapy and the Docile Body in Victorian St Catharines* (MA thesis, Brock University, 2006).

26 Junius, "A Walk Around Town! K" *St. Catharines Journal* (1856) reproduced as a facsimile reprint in *St. Catharines A to Z* (St Catharines: St. Catharines and Lincoln Historical Society, 1967), no pagination.

27 I am grateful to my colleague, Dr Kathryn Simonson, Department of Classics, Memorial University, for the translation, source, and context of this quotation.

28 "Why Publish a Homeopathic Journal?" *CJH* 1 (January 1856): 1.

29 Ibid.

30 Ibid., 2.

31 "The Canadian Journal of Homœopathy," *North American Journal of Homœopathy* 5 (1857): 294.32. See R. D. Gidney and W. P. J. Millar, *Professional Gentlemen: The Professions in Nineteenth-century Ontario*, (Ontario Historical Studies series, University of Toronto Press, 1994); and Tracey L. Adams, *A Dentist and a Gentleman: Gender and the Rise of Dentistry in Ontario,* (Toronto: University of Toronto Press, 2000).

33 Jennifer J. Connor, "Publisher Ownership, Physician Management: Canadian Medical Journals in the Victorian Era," *Victorian Periodicals Review* 43, no. 4 (2010): 388-428. I am most grateful for the assistance received from Jennifer Connor, and for her pointing me to useful sources.

34 *CJH* 1 (January 1856): 8.

35 Shauna Bream, *Mackenzie Heritage Printery: A Printing Museum* (MS thesis, Rochester Institute of Technology, 1999) 5-7.

36 Junius, "A Walk Around Town! P" *St. Catharines Journal* (1856) reproduced as a facsimile reprint in *St. Catharines A to Z* (St Catharines: St. Catharines and Lincoln Historical Society, 1967), no pagination.

37 The firm of Boericke & Tafel was an important manufacturing pharmacy based in Philadelphia, but it also developed into one of the most influential publishers of homeopathic medicine internationally. Many generations of the family operated the expanding business well into the twentieth century with the brand name continuing to the present; see Julian Winston, *The Faces of Homœopathy: An Illustrated History of the First 200 Years* (Tawa, New Zealand: Great Auk Publishing, 1999) 86-8. The broad range of activities of Boericke & Tafel, along with those of the Hahnemann Medical College and its hospital made the city into a mecca for homeopathy; see Naomi Rogers, *An Alternative Path: The Making and Remaking of Hahnemann Medical College and Hospital of Philadelphia* (New Brunswick, NJ: Rutgers University Press, 1998).

38 *CJH* 1 (January 1856): 8.

39 "Prospects of Success," *CJH* 1 (February 1856): 18.

40 "Remittances for Vol.1," *CJH* 1 (February 1856): 18. Regarding the treatment of families, see Connor, "Homoeopathy in Victorian Canada," 119.

41 See also "Letters Received," *CJH* 1 (February 1856): 18.

42 *CJH* 1 (February 1856): 18.

43 Yvan Lamonde, Patricia Lockhart Fleming, and Fiona A. Black, eds., *History of the Book in Canada: 1840-1918* (Toronto: University of Toronto Press, 2005) 215.

44 "A Word Personal," *CJH* 1 (April 1856): 46.

45 "Retrospective," *CJH* 1 (July 1856): 92-3 at p. 93.

46 "Semi-Annual Meeting of the Homeopathic Medical Society of Canada," *CJH* 1 (October 1856): 139-40.

47 "Journal of Homeopathy," *CJH* 1 (December 1856): 174-5; see also, "Prospectus," *CJH* 1 (December 1856): 176.

48 "Editorial Department," *CJH* 2 (January 1857): 16.

49 "Editorial Department," *CJH* 2 (January 1857): 17.

50 Quoted in R.D. Gidney and W.P.J. Millar, "The Origins of Organized Medicine in Ontario, 1859-1869," in *Health, Disease, and Medicine: Essays in Canadian History*, ed. Charles G. Roland (Toronto: Hannah Institute for the History of Medicine, 1982), 70. This work also describes the contours and complexities of the medical scene at mid-century. Also still informative in this context is, George W. Spragge, "The Trinity Medical College," *Ontario History* 58 (1966): 63-98.

51 See J.T.H. Connor, *Doing Good: The Life of Toronto's General Hospital* (Toronto: University of Toronto Press, 2000), 70-8.

52 "The Hamilton Banner and the Medical Colleges," *CJH* 2 (January 1857): 18-20.

53 "The Medical Monopoly," *CJH* 2 (March 1857): 67-9.

54 For an account of some of his life according to Tumblety himself, see *Narrative of Dr. Tumblety…An Exciting Life Sketch* (New York: Russells' American Steam Printing House, 1872) available at https://archive.org/details/narrativedrtumb00tumbgoog/page/n6/mode/2up ; see also Timothy B. Riordan, *Prince of Quacks: The Notorious Life of Dr. Francis Tumblety, Charlatan and Jack the Ripper Suspect* (Jefferson, NC: McFarland, 2009). On Tumblety in Canada, see Peter L. Twohig, "The 'Celebrated Indian Herb Doctor': Francis Tumblety in Saint John, 1860," *Acadiensis* 34, no. 2 (Summer/Autumn 2010): 70-88; and Michael McCulloch, "'Dr. Tumblety, the Indian Herb Doctor': Politics. Professionalism, and Abortion in Mid-Nineteenth –Century Montreal," *Canadian Bulletin of Medical History* 10 no. 1 (1993): 49-66.

55 "The Medical Monopoly," 69.

56 Ibid., 68.

57 *CJH* 2 (January 1857): 20.

58 *CJH* 2 (February 1857): 44.

59 "An Apology and an Appeal," *CJH* 2 (March 1857): 67.

60 Jennifer J. Connor, "Publisher Ownership, Physician Management," 392. Even in non-medical circles, the production of a journal, while indicating an important early stage of the professionalization of a scientific field or discipline, could be exhausting and expensive; see, J.T.H. Connor, "Of Butterfly Nets and Beetle Bottles: The Entomological Society of Canada, 1863-1960," *Scientia Canadensis* [*HSTC Bulletin*] 6 (1982): 151-71; and J.T.H. Connor, "To Promote the Cause of Science: George Lawson and the Botanical Society of Canada, 1860-1863," *Scientia Canadensis* 10, no. 1 (1986): 3-33.

61 On the range of medical publishing in Victorian Canada, see Jennifer J, Connor, "Self-Help Medical Literature in 19th-century Canada and the Rhetorical Convention of Plain English,"*Journal of Technical Writing and Communication* 243 (1994): 265-83; and Jennifer J. Connor, "Stalwart Giants: Medical Cosmopolitanism, Canadian Authorship, and American Publishers," *Book History* 12 (2009): 209-39.

Frontières, visées et spécialisation de la géographie: les habitus disciplinaires dans la Revue canadienne de géographie et les Cahiers de géographie de Québec (1947–1964)

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Résumé : *Partant du principe que les revues scientifiques constituent un lieu privilégié de formation des normes disciplinaires, cet article propose d'analyser le rapport à la géographie dans deux de ses revues centrales au Québec. L'étude de textes parus dans la Revue canadienne de géographie et dans les Cahiers de géographie de Québec, entre 1947 et 1964, met en relief certains enjeux disciplinaires, contribuant ainsi à l'écrtiure d'une histoire de l'institutionnalisation de la géographie dans les universités québécoises de langue française. L'analyse permet de circonscrire trois registres de rapport à la discipline, à savoir la géographie conçue comme : 1) un complément de culture et un idéal de synthèse; 2) un corpus de savoirs utiles à la société; 3) une discipline «scientifique», vision révélatrice d'une rupture entre géographes de l'ancienne et de la nouvelle génération.*

Abstract: *Based on the principle that scientific journals constitute a key site for the establishment of disciplinary norms, this paper examines the prevalence of approaches to the discipline of geography in two of its central journals in Quebec. The study of texts published between 1947 and 1964 in the Revue canadienne de géographie and in the Cahiers de géographie de Québec calls attention to certain disciplinary concerns, the highlighting of which contributes to a history of the institutionalization of geography in Quebec French-speaking universities. In this regard, three different levels of relationship can be delimited, namely geography seen as: 1) a cultural complement and an ideal of synthesis; 2) a corpus of knowledge useful to society; 3) a "scientific" discipline, revealing a rupture between generations.*

Mots-clés : Géographie, habitus, discipline, Québec, revues savantes, spécialisation

L'ÉTUDE DES SPÉCIFICITÉS DU DÉVELOPPEMENT historique des disciplines scientifiques ne constitue pas une nouveauté en soi.[1] En effet, depuis quelques décennies, historiens et sociologues ont analysé les processus d'institutionnalisation de divers domaines de recherche. Des études de cas traitant tant des sciences sociales et humaines que des sciences naturelles et appliquées ont ainsi mis en lumière les invariants sous-jacents à la structure des disciplines.[2] Si invariants il y a, certaines spécificités propres aux contextes historiques ou nationaux peuvent néanmoins subsister.[3]

Le présent article cherche à explorer une période charnière, mais peu étudiée, de l'histoire de la géographie au Québec. Il s'agit ici de revenir sur les premiers moments de l'institutionnalisation du champ de la géographie, en nous intéressant plus particulièrement aux débats portant sur sa définition et sur l'orientation de ses pratiques dans les pages de deux revues nationales entre 1947 et

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1964, à savoir la *Revue canadienne de géographie* (RCG) et les *Cahiers de géographie de Québec* (CGQ). À l'instar d'autres disciplines des sciences humaines et sociales, l'institutionnalisation de la géographie au Canada, et plus particulièrement au Québec, constitue un phénomène récent lorsqu'on effectue la comparaison avec la trajectoire historique de la discipline en Europe ou aux États-Unis.[4] Cependant, comme ailleurs, le statut de cette discipline ainsi que la délimitation des objets qu'elle recoupe suscitent le débat.[5]

Bien que précisément délimitée sur le plan historique, notre démarche tient compte de certains constats contemporains quant à la structuration de la recherche et de l'enseignement de la géographie, à savoir sa subdivision aujourd'hui normalisée, d'abord entre « géographie humaine » et « géographie physique », puis en plusieurs grands domaines de spécialisation qui auraient, à toutes fins utiles, bien peu en commun sinon de bénéficier d'une assise institutionnelle commune ; pensons aux structures départementales ou encore aux revues disciplinaires généralistes. Replonger dans les discours touchant à la raison d'être de la géographie en tant que discipline à un moment où celle-ci prend place dans le milieu universitaire québécois revient donc à repenser un état de fait que d'aucuns ont analysé, voire critiqué, au prisme de la fragmentation ou de la compartimentalisation.[6]

Mobilisant la théorie des champs de Pierre Bourdieu, notre recherche, bien qu'exploratoire, vise à mieux comprendre les dynamiques que sous-tendent les débats sur la délimitation du champ de la géographie au Québec. Elle contribue ainsi à une meilleure compréhension de son histoire disciplinaire et à problématiser une situation normalisée – à savoir la structuration de la discipline en plusieurs spécialités faiblement fédérées – en montrant qu'il ne s'agit pas d'une constante ou d'un « donné » sur le plan historique. Immanquablement, une question émerge : que peuvent nous apprendre les prises de position et les discours des « porte-parole » de la discipline sur les enjeux qui structurent le champ de la géographie savante au Québec durant les premières décennies qui suivent l'après-guerre ?

Dans cette optique, nous nous appuyons sur plusieurs travaux clés qui se sont penchés sur l'histoire de la discipline. D'ordinaire, les chercheurs s'étant intéressés aux acteurs ayant porté la discipline dans les universités ont été, souvent, à la fois juges et parties dans la mesure où ils faisaient eux-mêmes partie du groupe.[7] Des travaux récents, comme l'importante étude exploratoire menée par Laurent Deshaies[8], ont cependant réactivé les questions qui animent les recherches en histoire de la géographie au Québec. Retenons ici quelques jalons. Dans une tentative visant à cerner le propre de la « géographie québécoise » par l'entremise de l'histoire institutionnelle et de l'histoire des idées, Denise Pumain, géographe française formée à la Sorbonne, s'est entre autres intéressée à la production scientifique (articles savants, monographies, thèses) et aux profils académiques de géographes québécois clés. Elle brosse ainsi un portrait intéressant de la place des différents champs de spécialisation et des trajectoires participant de la disciplinarisation de la géographie au Québec.[9] Mobilisées et bonifiées

par Louis Trotier[10], alors président de la Canadian Association of Geographers (CAG), ces données illustrent l'intérêt des publications nationales pour qui cherche à produire une radioscopie des pratiques de publication en géographie au Canada. Au tournant des années 2000, Mario Bédard s'est quant à lui intéressé à l'histoire de la géographie culturelle au Québec, du contexte de son émergence, ou plutôt de son autonomisation vis-à-vis d'une géographie humaine générale, aux enjeux qu'elle fédère aujourd'hui.[11] Il a ainsi illustré les effets du processus de spécialisation universitaire sur les pratiques dans un sous-champ précis, sans toutefois aborder la question par l'entremise de sa structure. Parallèlement, Anne Gilbert a su mettre en exergue les points de convergence et de divergence entre le Québec et la France pour ce qui est de la géographie sociale.[12]

Notre propos s'organisera en trois sections. Dans un premier temps, il sera question de jeter les fondations du cadre théorique et méthodologique mobilisé et, ainsi, de clarifier les tenants et aboutissants de la démarche proposée. Dans un deuxième temps, un bref survol de l'histoire institutionnelle de la géographie au Québec posera les assises contextuelles à partir desquelles nous aborderons la période qui nous occupe. Dans un troisième temps, le cœur de notre travail sera présenté suivant l'analyse des textes à teneur éditoriale publiés dans les revues nationales retenues. Mentionnons d'emblée que notre analyse gravitera autour d'un enjeu relevé par le dépouillement des textes entourant la production scientifique, à savoir la question de la « localisation » et de la justification des frontières disciplinaires à un moment de l'histoire où l'idée de « spécialisation » semblait, pour certains, les effacer ou du moins les rendre plus fluides. De là, trois registres de rapports à la géographie seront circonscrits à partir du discours de géographes. Nous faisons ici référence à des conceptions de la géographie comme : 1) complément de culture et idéal de synthèse; 2) corpus de savoirs utiles à la société et 3) discipline scientifique, vision révélatrice d'une rupture entre géographes de différentes générations.

Cadre et méthode

À partir d'un cadre d'analyse empruntant à la théorie des champs de Pierre Bourdieu, nous voulons étudier l'évolution du champ de la géographie au Québec à un moment précis de son histoire. Schématiquement, un champ correspond à un espace social doté de règles et de structures qui lui sont propres et qui le différencient du reste du monde social. Le champ scientifique et ses sous-champs disciplinaires constituent des espaces de luttes pour le monopole de l'autorité scientifique et pour la capacité à définir ce qui lui est constitutif.[13] Cette définition du champ est tributaire de l'habitus de ses agents, concept compris comme un « système de dispositions durables et transposables qui, intégrant toutes les expériences passées, fonctionne à chaque moment comme une matrice de perceptions, d'appréciations et d'actions ».[14] Le concept d'habitus, lorsqu'appliqué à un champ disciplinaire, fait ainsi référence aux apprentissages par lesquels les perceptions, les jugements ou les comportements sont produits et reproduits au sein d'une discipline.

Tout champ possède un *nomos* particulier, c'est-à-dire un « principe de construction de la réalité objective » ne pouvant se transposer à un autre champ et « au régime de vérité qu'il impose ».[15] En cela, un champ scientifique est historiquement structuré en vertu de règles et d'enjeux spécifiques qui établissent le registre légitime de la discussion. En contexte disciplinaire, les différents champs seraient, d'une certaine façon, irréductibles les uns par rapport aux autres, définissant les objets et les méthodes qu'ils sont en mesure de s'arroger. On parle ainsi des principes sociaux, épistémologiques et ontologiques entourant l'établissement de frontières ou, pour parler comme Bourdieu, d'un « œil disciplinaire ».[16]

Nous chercherons donc à circonscrire les éléments de définition du champ de la géographie au Québec (son *nomos*, son *habitus*), qui, à une époque d'effervescence institutionnelle, ont rendu intelligible ce qui était « dans » et « hors » de celui-ci. Plus encore, il s'agit de mettre en lumière les remises en question de l'ordre disciplinaire, de ce qui a été considéré comme digne d'être discuté, voire normalisé, dans les pratiques. Pour ce faire, nous mobiliserons les textes « périphériques » à la production scientifique proprement dite, c'est-à-dire les textes n'étant pas catégorisés comme des articles de fond, mais qui ont servi, de manière délibérée ou non, à définir la discipline et à établir son utilité. Ces textes peuvent être classés sous plusieurs catégories (éditoriaux, notes liminaires, nouvelles, chroniques, etc.) et ont été publiés dans la RCG et dans les CGQ entre le moment de leur création (1947 et 1956) et 1964.

Conséquemment, nous partons du principe que les revues nationales constituent une voie d'accès privilégié vers les représentations que les agents se font de leurs pratiques et de la façon dont ils entendent les infléchir par l'établissement de certaines normes. Nous prenons ainsi au sérieux l'idée selon laquelle un « savant est un champ scientifique fait homme, dont les structures cognitives sont homologues à la structure du champ et de ce fait, constamment ajustée aux attentes inscrites dans le champ ».[17] En considérant le caractère dynamique de la structure du champ, de son *nomos*, nous développerons les intuitions de Trotier, voulant que « si l'on cherche […] à percevoir ce qu'il y a de québécois dans la géographie québécoise, il apparaît très vite que c'est sa pratique bien plus que sa théorie ».[18] Ce faisant, nous nous intéressons à la représentation de la pratique de la géographie, de ses frontières, de ses visées et de ses orientations.

Le choix de la période étudiée (1947-1964) est lié au fait que, après l'émergence d'un courant quantitatif au cours des années 1950 et 1960, plusieurs commentateurs s'entendent pour parler des années 1970 comme d'une période de « malaise ».[19] La période de gestation de ce malaise, au cours des années 1950 et 1960, circonscrit plusieurs enjeux, à savoir la remise en question du paradigme régionaliste classique en géographie ainsi que la scission de plus en plus assumée entre géographie humaine et géographie physique par voie de spécialisation. Bien qu'arbitraire, le choix du moment qui clôture la période, soit l'année 1964, se justifie de plusieurs manières. Ce moment suit notamment le rapatriement de la RCG à l'Université de Montréal, signifiant la fin de l'implication de la Société de géographie de Montréal (SGM) dans la publication. Précisons que notre

objectif n'est pas de produire une périodisation, mais plutôt de contribuer à la compréhension des débats ayant pris place dans l'espace de publication géographique québécois. De fait, nous ne rejetons pas l'idée, régulièrement suggérée, selon laquelle l'année 1968 constitue la fin d'une époque, tant en géographie, comme le montrent les travaux de Deshaies[20], qu'en sciences sociales.[21]

La question des contours de la discipline et de sa pratique constitue souvent l'objet de réflexions prenant place dans les revues étudiées. La teneur de ces réflexions peut varier à la fois dans le temps et selon les auteurs. Ces variations temporelles, qui prennent ici la forme de registres de rapports à la discipline, ne doivent pas être conçues comme des successions nettes de paradigmes, mais bien comme des tensions constamment renouvelées. De ces rapports à la discipline, nous discernons d'abord une représentation de la géographie qui, servie par un idéal de synthèse, renvoie à l'idée d'un complément à la culture de l'*honnête homme*. La synthèse, conçue comme la prise en compte des éléments physiques et humains dans l'analyse des formes régionales et comme moteur d'unité disciplinaire, peut toutefois se voir traversée par une rhétorique de l'utilité. À terme, ce qui nous apparaît comme un conflit générationnel se construit graduellement autour d'une reconsidération de l'unité de la discipline par le truchement de sa spécialisation et de son application.

Brève histoire institutionnelle de la géographie au Québec

Le développement de la géographie au Québec s'inscrit d'abord dans les associations culturelles et scientifiques qui se créent en nombre durant la seconde moitié du XIX^{e} siècle, avant de se transposer dans le milieu universitaire près d'un siècle plus tard. Avant 1945, si l'on exclut le cadre scolaire[22] et les conférences de la Société de géographie de Québec, fondée en 1877, ou de la Société Saint-Jean-Baptiste avec Émile Miller, l'enseignement de la géographie est dispersé dans des départements et des écoles de natures diverses.

À l'École des hautes études commerciales de Montréal, on accueille dès 1910 les enseignements du géographe belge Henry Laureys. En 1931, Benoit Brouillette y devient titulaire d'une chaire de géographie économique. Ancien étudiant de l'École, ce dernier a bénéficié d'une bourse d'études à l'étranger du gouvernement québécois lui donnant accès à une formation de pointe en géographie à la Faculté des lettres de Paris, aux côtés d'Albert Demangeon et d'Emmanuel de Martonne, alors considérés comme les « patrons » de la géographie française.[23] Après la Seconde Guerre mondiale, c'est au tour de Raymond Tanghe de se joindre de façon permanente à l'École des hautes études commerciales, où il enseigne jusqu'en 1953. Il est à noter que ce dernier, originaire de Lille, s'est établi au Canada dans les années 1920. Ayant soutenu une thèse sur la géographie humaine de Montréal en 1927,[24] il enseigne par la suite dans diverses institutions montréalaises, dont les collèges Jean-de-Brébeuf et Stanislas.[25]

Après l'autonomisation de l'Université de Montréal vis-à-vis de l'Université Laval en 1920, son secrétaire général Édouard Montpetit assure la création d'une chaire de géographie. Émile Miller, alors secrétaire de la Société Saint-Jean-

Baptiste et enseignant à l'École normale Jacques Cartier, en devient le titulaire. Son décès survenu en 1922 met cependant fin à l'activité de la chaire.[26] Par la suite, les enseignements d'Yves Tessier-Lavigne à l'École des sciences sociales, auxquels s'ajoute la venue de professeurs invités, assurent une présence sporadique de la discipline à l'Université de Montréal. Jean Brunhes, ancien élève de Paul Vidal de la Blache et titulaire de la chaire de géographie humaine du Collège de France, y séjourne à la fin des années 1920, tout comme Raoul Blanchard, éminent géographe français à la tête de l'« École de Grenoble » (alors second centre de gravité de la géographie française après Paris), au cours des décennies qui suivent.

On constate donc que la discipline s'est longtemps retrouvée avec peu d'assises institutionnelles, justifiant l'adage selon lequel il s'agissait d'une géographie sans géographe.[27] Il faut attendre l'après-guerre, période charnière dans l'institutionnalisation des sciences au Québec et plus largement au Canada[28], pour voir la fondation de départements de géographie dans les différentes universités de langue anglaise (McGill, 1945 ; Sir George Williams, 1959), de langue française (Université Laval, 1946; Université de Montréal, 1947 ; Université de Sherbrooke, 1963 ; Université du Québec à Montréal, 1969) et bilingue, à la frontière avec le Québec (Université d'Ottawa, 1951). Une évolution analogue s'observe dans les fonctions publiques fédérale et provinciale: au fédéral, la Division géographique du ministère des Mines et des Relevés techniques est créée en 1947 et fait œuvre utile jusqu'à sa dislocation en 1967, tandis qu'au Québec, le Service de géographie du ministère de l'Industrie et du Commerce est mis sur pied en 1952.[29]

Au sein de l'Association canadienne-française pour l'avancement des sciences (ACFAS), l'identité disciplinaire de la géographie demeure longtemps ambiguë. Avant la création d'une section de géographie en 1957, la trajectoire de la discipline dans ses agencements organisationnels y est des plus sinueuses. Camille Laverdière, géographe formé aux universités Laval (1950), de Montréal (1954) et à la Sorbonne (1964) ayant enseigné à l'Institut de géographie de l'Université de Montréal (IGUM) de 1954 à 1990, n'a pas manqué de souligner, à titre de témoin privilégié, l'inconstance des assises de la discipline. Celle-ci, en effet, était tantôt affiliée à la section de géologie et minéralogie, tantôt à celles d'ethnologie, d'histoire, de philosophie, de pédagogie ou encore de sciences sociales.[30]

L'histoire de la publication géographique au Canada remonte quant à elle au dernier quart du XIX^{e} siècle. Publiés à partir de 1880, les *Bulletins de la Société de géographie de Québec*, premier périodique canadien de géographie, suivent le modèle des sociétés de géographie européennes en misant sur les comptes rendus de voyages et les articles descriptifs à saveur coloniale. Avec la fondation de la Royal Canadian Geographical Society en 1929 et de la SGM en 1939, la tradition de publication géographique se poursuit. Dans le contexte québécois, un bulletin conjoint unissant les sociétés de Québec et de Montréal fait presse de 1942 à 1944 sous l'égide de Benoît Brouillette, alors président de la SGM.[31] La création de l'IGUM en 1947 coïncide avec la mise sur pied de la RCG, rebaptisée *Revue de géographie de Montréal* (RGM) en 1964. Du côté de Québec, l'Institut d'histoire et de géographie de l'Université Laval assure la création des *Cahiers de géographie* et des *Notes de géographie* à l'initiative de Louis-Edmond Hamelin, docteur en

géographie de l'Université de Grenoble (1951), et de son collègue historien et géographe Fernand Grenier. Avec la mise sur pied de l'Institut de géographie de l'Université Laval (IGUL) en 1955, le projet gagne en autonomie et donne naissance aux CGQ en 1956. Bien que le présent article se concentre sur la RCG et les CGQ, il est important de mentionner la fondation de la CAG, une organisation disciplinaire pancanadienne assurant, dès sa création en 1951, la publication du *Canadian Geographer/Géographe canadien* (GC). En définitive, c'est l'addition des développements susmentionnés qui pousse Hamelin à affirmer en 1962 que « la géographie dans le Québec est maintenant bien lancée ».[32]

Complément de culture et idéal de synthèse

Au tournant des années 1950, certains porte-parole des institutions de la géographie au Canada français, Gérard Aumont et Benoit Brouillette au premier chef, contribuent à positionner la discipline dans un contexte culturel spécifique. Partie prenante de l'enseignement classique depuis le XVI[e] siècle[33], la géographie prend ainsi place dans la culture humaniste qui en constitue l'idéal pédagogique. C'est cette fonction foncièrement éducative que l'on retrouve dans le discours d'agents actifs issus à la fois du milieu universitaire, associatif, scolaire et même ecclésiastique. Si nous avons déjà fait mention de Brouillette, le cas d'Aumont mérite notre attention. Prêtre de la compagnie de Saint-Sulpice, ce dernier reçoit, durant les années 1920 et 1930, les enseignements de Miller à l'École normale Jacques Cartier, puis de Brouillette à l'École des hautes études commerciales, avant d'occuper un poste d'enseignement au Collège André-Grasset à partir de 1937. Actif au sein de la SGM dès sa fondation en 1939, il remplace Brouillette à sa présidence en 1947 et demeure en poste jusqu'en 1957, année durant laquelle le botaniste Pierre Dansereau lui succède. Au moment de la passation, Brouillette dira d'Aumont qu'il fût un enseignant clairvoyant, travaillant sans relâche pour une meilleure représentation de la discipline dans les écoles et dans le milieu associatif.[34]

Au moment de sa fondation, la SGM se donne pour mission de faire œuvre culturelle et éducationnelle[35], mission qui perdurera bien entendu sous la présidence d'Aumont et qui se transpose dans les pages de la RCG, comme en témoignent les notes liminaires des numéros publiés en 1950. On peut ainsi y lire que la revue « s'adresse tout autant au savant et au chercheur qu'au professionnel, à l'homme d'affaires, au professeur et à l'étudiant qui trouvent dans la géographie une source de renseignements et un complément de culture ».[36] Dès lors, on comprend mieux la position éditoriale d'Aumont, qui aura été président de la revue de 1947 à 1949 et de 1952 à 1956, puis rédacteur de 1950 à 1955,[37] lorsqu'il affirme :

> On finira peut-être par admettre de façon pratique la valeur formatrice de la géographie. À côté des matières de culture générale aujourd'hui reconnues et acceptées, cette discipline sera enfin chez elle dans l'ensemble des sciences qui contribuent à former l'honnête homme ; grâce à une connaissance solide de la géographie, le nouvel humaniste du 20[e] siècle ne sera pas dépaysé dans le monde où il devra vivre.[38]

La géographie se conçoit donc comme l'une des sciences visant à former l'*honnête homme* ou, dit autrement, comme un complément à une culture valorisant l'emprise de l'Homme sur le monde par l'entremise de la connaissance de ce dernier. La culture classique dans laquelle baigne l'enseignement de la géographie tel que conçu par Aumont, condensé dans l'idéal-type de l'*honnête homme*, contribue à positionner la discipline dans un contexte social précis qui, dans ce cas-ci, nous ramène au Québec d'avant la Révolution tranquille. Mobilisée dans certains travaux portant sur l'histoire des collèges classiques et des professions libérales au Québec du XIX^e^ et du XX^e^ siècle, la figure de l'*honnête homme* implique une façon de dire, de faire, de penser et d'être dans le monde, intimement liée à la fonction même des collèges classiques, à savoir la reproduction sociale d'un idéal culturel.[39] En outre, il s'agit d'un « répertoire de lieux communs », un habitus particulier, une façon d'être au monde passant par la conjugaison d'un savoir-raisonner, d'un savoir-dire et d'un savoir-faire, pensés comme la « nourriture quotidienne des humanistes ».[40]

Même dans l'optique d'une connaissance « plus réaliste et plus pratique »[41], celle-ci s'oriente vers un idéal d'érudition. Du moins, l'application de cet idéal demeure de l'ordre des préoccupations humanistes « en vue d'une compréhension meilleure des peuples les uns envers les autres ».[42] Aumont insiste alors sur le « besoin d'hommes cultivés, très au courant des problèmes où les connaissances géographiques sont indispensables »[43] et sur le rôle de la géographie dans la constitution de cette compétence. En admettant les bienfaits de la discipline pour la formation pratique, Aumont revient au caractère synthétique d'une géographie classique, laissant poindre l'idéal d'un recul érudit: « le premier souci du géographe consiste à étudier le milieu dans lequel l'homme vit et le degré d'adaptation de l'homme à ce milieu ».[44] Gardons à l'esprit que l'application d'une telle démarche se faisait alors par le truchement d'une compréhension historique du processus d'adaptation. Tourné vers le passé, ce questionnement ne relevait donc pas *de facto* d'une démarche pratique.

Cette idée que la géographie constitue l'une des composantes essentielles de la culture générale en tant qu'idéal distinctif n'est pas uniquement portée par Aumont. En effet, Brouillette, dans un texte publié en 1955 dans le GC[45], souligne l'importance de la discipline et de sa portée explicative dans l'éducation libérale. Au-delà de sa valeur pédagogique, la géographie acquiert également une valeur sociale dans la mesure où celle-ci permettrait de surpasser le chauvinisme d'un nationalisme étroit et de surmonter l'isolement national. Rejoignant cette visée sociale et citoyenne qui traverse les frontières[46], Brouillette, en insistant sur son importance curriculaire, va jusqu'à affirmer que « *to think oneself is a sacred right of all human beings* » et que, par conséquent, « *geography contributes to such an ideal, mak[ing] it worthy a place* [sic] *in liberal education* ».[47] De plus, à l'instar d'Aumont, Brouillette met en relief le caractère généraliste du travail du géographe, par opposition au travail spécialisé qui, lui, relèverait de l'application. En se référant à Louis-Edmond Hamelin, il réaffirme que l'esprit géographique (*geographical way of thinking*) suppose des connaissances précises sur le monde, mais également une mise à distance nécessaire à leur synthèse.

L'inscription culturelle de la formation classique, ou du moins de la pensée humaniste ou libérale, ainsi que la place accordée à la géographie dans les écoles et la société font néanmoins l'objet de critiques, notamment chez les jeunes géographes. À cet égard, Jean Décarie, dans un texte de 1959, analyse les formes de la discipline dans les institutions universitaires montréalaises. Étudiant au moment de la publication de la note de Brouillette, ce dernier fait partie d'une génération de géographes s'étant orientée vers le champ de la planification urbaine. En parlant de l'enseignement prodigué à l'Université de Montréal, il insiste sur sa « tendance à souffrir de sclérose scolastique » et à s'instituer en « système hérité » qui ne correspondrait plus à la formation dispensée tant elle se cantonne à « un humanisme qui ne génère aucune recherche vraie ».[48] Inversement, du côté de l'Université McGill, il semblerait que « l'enseignement diffusé […] [soit] vraisemblablement compromis par une spécialisation hâtive, au point où le seul remède envisagé serait un retour aux méthodes classiques ».[49] Cette dichotomie entre une géographie consubstantielle à une éducation générale et une spécialisation à outrance de la recherche serait synonyme de « malaise endémique, académique » et d'un « manque de pensée géographique qui s'exprime ici par un émiettement de la profession, là par une stagnation éducationnelle ».[50]

Cet exemple de dissociation et d'ambivalence est révélateur d'une fracture générationnelle, qui se confirmera par la suite lorsque viendra le temps de situer l'utilité de la géographie, de définir les tenants et aboutissants de sa pratique et les objets qu'elle considère « en droit » de s'arroger. Cette tension entre la conception éducationnelle et prospective/spécialisée de la géographie, combinée à l'insistance d'Aumont et Brouillette quant à son caractère généralisant, nous mène à la question de la place de la synthèse et de la spécialisation dans la formulation des contours de la discipline.

À cet effet, Pierre Dagenais, cheville ouvrière de l'institutionnalisation de la discipline à Montréal, s'est fait le porte-parole du paradigme misant sur le travail de synthèse. Associée à la géographie française classique et bien visible dans l'enseignement de la géographie[51], cette démarche constitue une composante essentielle de l'habitus disciplinaire du temps, auquel se greffe d'une certaine manière la valorisation de la géographie comme complément à la culture de l'*honnête homme*. Rappelons que Dagenais, tout comme Brouillette, fait partie de la génération d'étudiants canadiens-français ayant bénéficié du support financier du programme de bourses d'études à l'étranger du gouvernement du Québec. Après avoir terminé ses études à l'École des hautes études commerciales de Montréal, ce dernier se rend à Paris pour y suivre à son tour les enseignements d'Albert Demangeon et d'Emmanuel de Martonne. Il obtient par la suite un doctorat en géographie à l'Université de Grenoble en 1939, sous la direction de Raoul Blanchard. De retour au Québec, il prend part aux activités de l'Institut franco-canadien et enseigne à l'École normale Jacques Cartier avant de participer, quelques années plus tard, à la fondation de l'IGUM à titre de premier directeur.[52]

En 1953, la RCG publie un texte de Dagenais relevant à la fois de l'exposé et du plaidoyer en faveur d'une conception somme toute orthodoxe de la géographie. Il y précise que

> [m]algré toutes les innovations, la géographie demeure la science du paysage ; elle consiste à analyser, à décrire et à expliquer le résultat de la combinaison des éléments physiques et humains qui constituent l'originalité des surfaces terrestres […]. Au milieu des sciences systématiques et des sciences de l'homme, seule la géographie se propose un tel objet. À travers toutes les incertitudes de notre discipline, c'est là un point qui ne lui a jamais été contesté. Toutes les autres formes de géographie ont été attaquées avec plus ou moins de succès, revendiquées par les sciences voisines. L'interprétation géographique d'une région ne consiste pas évidemment, comme on le croit souvent, dans une énumération de tous les faits qui se rapportent au sol, au relief, au climat, à la végétation, à l'hydrographie, à la population et son activité. Ce n'est pas un simple travail d'inventaire.[53]

La géographie, en tant que science des paysages et des régions, passerait ainsi par la combinaison d'éléments humains et naturels en cela que ces derniers concourent à la production des réalités géographiques. Cette lecture est également celle que l'on retrouve dans l'analyse de Deshaies, qui identifie le cœur de la pensée de Dagenais.[54] Il va sans dire que cette orientation rejoint celle de Hamelin, qui, dans un texte de 1952 devenu référence, insistait sur l'importance de tenir compte des facteurs « terre » et « homme », dans la mesure où une « géographie humaine sans relation aucune avec l'influence de la nature ne serait plus de la géographie » et que celle-ci ne peut se concevoir « sans une géographie physique solide sur laquelle elle s'appuie ».[55] Au-delà du travail d'inventaire, la géographie, en tant que « discipline homocentrique », doit se tourner vers l'étude des causes sous-jacentes.[56]

Rompus aux tendances disciplinaires développées en France durant la première moitié du XX^{e} siècle, Hamelin et Dagenais, ayant tous deux travaillé auprés de Raoul Blanchard à Grenoble, illustrent l'importance de la synthèse en géographie et les difficultés sous-jacentes en matière de relations interdisciplinaires, annonçant ainsi la magnitude des oppositions qui animeront les géographes du Canada et d'ailleurs jusqu'au tournant des années 1970. Il importe alors de réfléchir avec Hamelin au fait qu'il « n'y a pas de "géographie une", c'est-à-dire une discipline qui serait autonome, isolée, totalement indépendante des sciences voisines ». Ainsi, « [c]omme le fait géographique, la géographie fait partie d'un ensemble ».[57]

De l'utilité de la synthèse géographique pour la planification

En géographie, la notion de synthèse constitue l'une des pierres angulaires de la tradition disciplinaire française depuis son émergence dans le dernier quart du XIX^{e} siècle.[58] Durant la seconde moitié du XX^{e} siècle, l'idée qu'une analyse proprement géographique doive considérer la multiplicité complexe des processus à l'œuvre dans la production des réalités géographiques n'est d'ailleurs pas totalement évacuée dans le monde francophone.[59] Le contexte socioéconomique qui caractérise les Trente glorieuses va néanmoins favoriser, voire conditionner,

l'apparition d'un courant prospectif, centré sur la prédiction et la planification.[60] Si un discours fort plaçant la géographie au cœur de l'éducation libérale et de la culture de l'*honnête homme* subsiste, de nouvelles préoccupations apparaissent. Les textes publiés dans la RCG et les CGQ sont alors marqués par cette période de mutation. Ils font intervenir des agents ayant été formés à la fois avant et après ce moment charnière, ce qui explique la relative divergence des points de vue quant à l'orientation à donner à la discipline.

Cette orientation justifie l'organisation en 1958 d'un symposium sur la *géographie appliquée*, renvoyant aux travaux du géographe français Michel Phlipponneau. L'objectif est entre autres de désenclaver la géographie de son statut de « discipline de mémoire », qui, souvent, la limite à sa fonction scolaire.[61] Organisé par l'Association canadienne d'urbanisme, la Société de géographie de Québec et l'IGUL, ce symposium constitue une première au Canada français. Dans sa recension des activités du symposium, Hamelin, par ailleurs ardent défenseur de la synthèse géographique[62], soutient que la distinction entre géographie générale et appliquée, plaçant la première nécessairement au-dessus de la seconde, est devenue caduque et que le développement de ces deux sillons ne peut plus s'effectuer en vase clos. Plus encore, il affirme que « [p]our faire en 1958 une géographie de 1958, il nous fallait songer à la géographie appliquée »[63], faisant de cette nouvelle géographie la garante de l'actualité de la discipline.

Du côté de la RCG, Pierre-Yves Pépin, alors étudiant à l'IGUM, est chargé de commenter l'organisation du symposium. Émettant un constat similaire à celui de Hamelin, il exprime un certain décalage générationnel. N'occupant pas une position aussi centrale que son homologue, il parle davantage des opportunités concrètes et parfois perdues liées au développement de cette géographie appliquée:

> Depuis la fin de la guerre, de belles opportunités auraient été perdues pour les géographes alors que des spécialistes relevant d'autres disciplines, économistes, sociologues, ingénieurs, n'ont pas hésité à s'emparer de certains cadres économiques en voie de formation […] La présence de géographes au sein de ces organismes aurait pu éviter certaines erreurs coûteuses de planification économique régionale.[64]

Si du côté de Hamelin, la consolidation des assises de la géographie appliquée constitue le chemin nécessaire au développement de la discipline, chez Pépin, la question relève d'enjeux concrets dépassant le cadre académique, pour s'intégrer aux questions du développement de la société et de l'organisation de l'espace. Sans pour autant être en rupture avec le cadre académique, il précise que, bien que cette « initiative contribuera sûrement au développement de la géographie appliquée au Canada, […] ce champ d'activité particulier de la discipline géographique ne souffre pas des improvisations et demande à ceux qui s'en préoccupent une solide formation scientifique ».[65] Après son séjour à Montréal, Pépin part étudier à l'École pratique des Hautes Études à Paris, puis complète un doctorat à l'Université de Rennes. De retour au Québec, il est d'abord employé au Conseil d'orientation économique du Québec avant d'obtenir, en 1965, un poste de professeur à l'Institut d'urbanisme de l'Université de Montréal.[66]

En 1959, c'est au tour de Marcel Bélanger de contribuer au débat. Formé à Montréal et à Grenoble, où il obtient son doctorat en 1958[67], ce dernier agit à titre de responsable des travaux pratiques au sein de l'IGUM de 1958 à 1973. Il obtient par la suite un poste à l'Université Laval, où il développe des relations étroites avec certains géographes étrangers, tel Paul Claval, qui avouera avoir été inspiré par sa conception de la culture.[68] En 1959, soit un an après son entrée en poste à Montréal, Bélanger énonce dans les pages de la RCG qu'il y a « lieu d'insister sur l'apport important que représente la participation des géographes à la solution de ces problèmes [urbains et ruraux]; c'est ce que nous appelons la géographie appliquée ». Dans cet ordre d'idée, il va de soi que « les horizons qui s'ouvrent au géographe sont vastes et […] à l'échelle du monde et de ses problèmes ».[69] Sur un ton pragmatique, il tente ainsi de donner un sens aux récents développements de la géographie économique et d'encourager la poursuite de cette filière:

> Ces nouveautés ne sont pas seulement utiles en raison des services que rendent les géographes, elles le sont aussi parce qu'elles créent des emplois, et ce faisant sauvent en quelque sorte les instituts de géographie de nos universités, car les postes de professeurs sont trop rares, trop rares.[70]

Saturés, les débouchés les plus naturels pour les géographes diplômés, à savoir le milieu de l'enseignement, ne peuvent suffire à la croissance soutenue du nombre d'étudiants dans les nouveaux instituts québécois. À titre d'exemple, le nombre des inscriptions à l'IGUL bondit entre 1948 et 1963, passant d'une moyenne annuelle de deux admissions (1948-1954), à 12 (1954-1960), puis 20 (à partir de 1960).[71] La filière professionnelle, axée sur la mise en pratique des connaissances, s'impose dans la mesure où elle permet de diversifier les perspectives d'emplois des nouveaux diplômés en géographie.

La polyvalence du « regard géographique » participe ainsi d'un intérêt à légitimer l'utilité des connaissances et de la démarche géographiques. Cinq ans après la publication des comptes rendus du premier symposium de géographie appliquée à Québec, certains, comme Léon Nahon, géographe de l'Université de Montréal qui agira à titre de rédacteur de la RCG de 1960 à 1963[72], énoncent encore, pour qualifier le rôle du géographe, qu'il est possible de préserver cet idéal d'érudition et d'ordre au savoir, tout en mettant à profit l'utilité pratique de ces connaissances. Ainsi, Nahon, s'exprimant sur l'utilité du géographe dans les études rurales, écrit:

> Nous voyons donc que le géographe sera appelé à intervenir dans de nombreux domaines et souvent bien différents les uns des autres. Prenons, par exemple, le domaine de la géographie rurale. Jusqu'à ces dernières années, on ne s'était pas préoccupé de ce que les géographes pouvaient apporter à la compréhension et à la solution des problèmes ruraux […] Pour résumer ces objectifs, il est apparu que le géographe, par sa formation polyvalente, était à même d'étudier des aspects très importants. En effet, lorsque le géographe étudie le milieu rural, plusieurs problèmes doivent entrer en considération.[73]

Pourtant, déjà en 1955, Richard Lapierre et Pierre Camu, deux géographes alors actifs dans le milieu professionnel, s'étaient prononcés sur les apports de la géographie au domaine de la planification. L'idée d'une identité sociale

commune, faisant des termes « géographes » et « planificateurs » des synonymes, n'est pas mise de l'avant, mais on ne cherche pas moins à légitimer l'action des géographes dans le secteur de l'aménagement.

C'est ainsi que Lapierre, ancien étudiant de l'Université de Montréal, alors géographe au Service d'urbanisme de la ville de Montréal, soutient que « le travail du géographe complète donc celui de l'urbaniste ; la science de l'enquête s'allie à celle de la planification ».[74] Cantonnant le travail du géographe à « l'enquête » mesurée et distanciée, il en vient à circonscrire une certaine démarche qui, par l'objet même de l'analyse, devient essentielle à la planification:

> Tous ces problèmes, et bien d'autres encore, font appel à des procédés géographiques et cartographiques complexes ; leur connaissance est de toute première importance pour l'aménagement d'une ville nouvelle comme pour l'extension planifiée d'une ville ancienne. Et l'aptitude du géographe à isoler et à analyser tous les facteurs parce que ce dernier doit résoudre continuellement des problèmes d'aménagement, qui demandent une compréhension parfaite de l'ensemble du sujet aussi bien que des détails.[75]

Bien qu'actif dans le milieu de la planification, Lapierre se réclame pleinement de la géographie, lui qui devient quelques années plus tard professeur de géographie au Collège militaire royal de Saint-Jean, puis à l'Université de Sherbrooke en tant que directeur fondateur du laboratoire de cartographie.[76] On peut donc y voir le discours d'un géographe cherchant à faire valoir un capital de connaissances dans un champ que la conjoncture semble ouvrir aux agents qui se tournent vers la fonction publique, tout en évitant d'amalgamer ses intérêts spécifiques à ceux des professionnels de la planification.

Dans cet ordre d'idée, on voit d'autres géographes du milieu professionnel, comme Pierre Camu, discourir sur ces enjeux. Formé à la géographie à l'IGUM, dont il est le premier docteur canadien-français, et à l'Université Johns Hopkins, où il reçoit les enseignements de Jean Gottman[77], Camu est à l'emploi de la Division géographique du ministère des Mines et des Relevés techniques du Canada jusqu'en 1956, avant d'osciller entre le milieu universitaire, en tant que professeur agrégé à l'IGUL (1956-1960) puis professeur auxiliaire à l'Université d'Ottawa (après 1994), et la haute fonction publique. À cet effet, Camu a notamment agi à titre de vice-président et de président de la Voie maritime du Saint-Laurent (1960-1973), puis en tant que président de l'Association canadienne des radiodiffuseurs (1973-1977) et du Conseil de la radiodiffusion et des télécommunications canadiennes (1977-1979).[78] Dans les pages de la RCG, ce dernier précise que, sans nier l'aspect pratique, concret et appliqué de la discipline, le rôle du géographe dépasse le cadre du milieu éducatif à l'intérieur duquel il fut si longtemps cantonné, l'amenant à devenir « l'interprète de la vie régionale », une « voix nouvelle dans l'organisation de la cité »[79], légitime hors des espaces sociaux lui étant traditionnellement associés. Qualifiant le travail du géographe, il rejoint Lapierre en affirmant que la formation, l'objet d'étude, le travail de terrain et les méthodes de recherche rendent le géographe indispensable au travail du spécialiste. En cela, c'est le « coup d'œil [synthétique] que le spécialiste n'a pas »[80] qui l'amène à mobiliser les éléments de réponse nécessaires au travail de planification.

Renouveau méthodologique et tension générationnelle

Depuis les années 1950, se développe un rapport ambigu quant à la perception du « standard » méthodologique admis. Nous sommes loin de l'idéal culturel (c'est-à-dire l'*honnête homme*) de la géographie. Des géographes émergents cherchent plutôt à promouvoir l'idée qu'il faille extirper la discipline de sa prédilection généraliste pour l'armer de rigueur méthodologique. Le cas de la géographie n'est pas unique. En effet, la sociologie canadienne-française des années 1930 et 1940 a elle aussi été aux prises avec un procès similaire, opposant la spécialisation, corrélative d'un perfectionnement des méthodes de recherche dans un cadre précis, à un idéal généraliste faisant la promotion de l'étude des faits sociaux dans leur totalité.[81]

Le rapport à la spécialisation et à l'application de la géographie dans les pages de la RCG et des CGQ peut également se faire plus âpre, justifiant parfois des critiques d'ordre méthodologique. C'est dans cette veine que la rédaction de la RCG signe, dans un numéro de 1958, une lettre faisant état de l'importance des discussions à caractère méthodologique : « Il est vrai que l'expression de nos connaissances géographiques doit montrer de la souplesse sans prêter toutefois à la fantaisie, doit offrir de la latitude et ne pas s'imposer des cadres rigides, doit exiger une méthode propre à cause de son optique. »[82] Sans se prêter au jeu du rejet pur et simple de la tradition, cette note laisse percevoir un malaise vis-à-vis l'absence de rigueur méthodologique.

Cette orientation nouvelle donne le ton à un discours théorique et méthodologique dont se réclame une nouvelle génération de géographes plus au fait des courants qui se développent dans les pays anglo-saxons[83], mais également en France, où l'expression d'« organisation de l'espace » devient récurrente.[84] Fait notable sur le plan de la socialisation, cette nouvelle génération entre dans le champ de la géographie à un moment où les instituts québécois commencent à être en mesure de former leurs propres étudiants et où la place de la recherche s'y fait de plus en plus importante, intégrant plus franchement l'habitus des géographes et créant une certaine distorsion vis-à-vis de la vocation éducationnelle de la discipline avec laquelle s'accordait un idéal généraliste.

En 1964, Louis Trotier, un jeune géographe de l'Université Laval rapidement promu à un poste d'enseignement[85], s'exprime dans les pages de la RGM sur « l'état actuel des études régionales », en ce qu'elles ne permettent pas de « parler d'une véritable géographie régionale dans le Québec ».[86] Cantonnée à un travail d'inventaire ou de description, la géographie régionale se doit, selon lui, de relever la barre. Sans remettre en question l'importance intrinsèque de « véritables analyses régionales pour la compréhension des caractères géographiques originaux »[87] du Québec, Trotier insiste sur les motivations scientifiques qui s'imposent dans un contexte de rationalisation de l'aménagement du territoire. En cela, il se distancie de la méthode érudite qui reproduit l'image de la géographie comme discipline scolaire. En parlant des conditions scientifiques nécessaires à la tenue de recherches rigoureuses, il insiste sur le fait que la méthode traditionnelle « ne permet pas de comprendre toute la réalité géographique puisqu'elle

néglige, en ne s'attachant qu'aux structures, les forces diverses qui relient entre eux certains points d'un territoire et contribuent ainsi fortement à le différencier ».[88] Il s'avèrerait ainsi nécessaire de délaisser le cadre hérité de la géographie française classique, s'étant principalement construit sur l'analyse des paysages et des *genres de vie*, pour adopter une approche axée sur l'analyse et l'organisation des espaces fonctionnels, c'est-à-dire sur une conception de l'espace où prime la « vie des relations » par l'entremise des flux économiques, des mobilités et, plus généralement, des rapports dynamiques qui se nouent et qui donnent forme à une région non pas par l'entremise de ses délimitations, mais bien par la constitution d'une armature unissant centres et périphéries.[89]

En cela, c'est l'objet même de la géographie qui est déplacé sous l'égide d'une science « appliquée » ou du moins applicable. Ainsi, souligne Trotier, « le point de départ de l'analyse régionale devient […] l'étude des réseaux urbains, c'est-à-dire de la position et de l'influence des villes, de leurs fonctions et de leur hiérarchie, de leurs rapports de concurrence, de domination et de complémentarité ».[90] Il insiste sur l'importance de s'éloigner des énumérations à tiroirs, une façon de faire qui, bien qu'érudite, ne permet pas une véritable compréhension des dynamiques géographiques. Pour pallier ces lacunes, c'est aux nouvelles méthodes de recherche et de présentation des données qu'il propose de faire appel:

> La géographie devient de plus en plus quantitative et c'est tant mieux. Tout en se gardant bien de prendre les moyens pour la fin, il ne faut pas se priver d'utiliser les méthodes statistiques, qui permettent une meilleure description et suggèrent souvent des explications de la réalité régionale. De même, la carte, qui a toujours été l'un des instruments principaux de l'analyse régionale, peut révéler au géographe les éléments essentiels du paysage, les structures ou les courants dynamiques, qui expliquent l'organisation de l'espace; elle le fera d'autant mieux qu'elle aura été construite à partir de données plus « sophistiquées » et avec des modes de représentation plus soucieux.[91]

Les avancées en termes de visualisation cartographique constituent un tournant important dans la rationalisation de la géographie à des fins de prédiction et de gestion, ce qui participe d'un délaissement graduel des études portant sur le milieu ou les rapports verticaux entre les êtres humains et la nature au profit d'une lecture plus horizontale, centrée sur les relations dynamiques entre les individus dans l'espace.

Le contact soutenu de Trotier avec la géographie quantitative qui se développe aux États-Unis peut en partie expliquer cette orientation. Lors d'un séjour d'études aux États-Unis, ce dernier a l'occasion de parfaire sa maîtrise des méthodes quantitatives auprès de Gunnar Alexandersson, spécialiste de la modélisation statistique appliquée à la géographie économique et à la géographie des transports à l'Université du Winsonsin et du Maryland au tournant des années 1950-1960.[92] Durant les décennies qui suivent, les méthodes adoptées, puis développées par Trotier et ses collègues de l'Université Laval seront appliquées dans le domaine de l'aménagement, notamment au Bureau des recherches économiques du ministère de l'Industrie et du Commerce, où plusieurs géographes sont actifs.[93] Assurément, le cas type de Trotier apparaît représentatif d'un renouveau de la géographie qui n'est pas sans faire appel à certaines dynamiques générationnelles

et qui vient contredire l'assertion de Trevor Barnes selon laquelle la géographie quantitative n'aurait eu aucun écho au Canada francophone.[94]

Se penchant sur le phénomène de génération et ses effets, le sociologue Marcel Fournier cerne la situation en prenant les membres de la classe intellectuelle et culturelle québécoise comme cas de figure :

> [I]ls sont dotés d'un programme homogène de perception, de pensée et d'action qui leur confère une « parenté d'esprit ». Cette parenté n'est pas seulement morale ou idéologique, elle est aussi et surtout logique, les intellectuels d'une même génération tendant, surtout lorsqu'ils ont suivi les mêmes itinéraires sociaux, à maîtriser un corps commun de catégories de pensée. Il y a donc un effet de génération.[95]

De là, il s'avère nécessaire de penser la rupture sur le plan de la pensée et du bagage intellectuel que sous-tend le discours que tient Trotier sur l'état de la géographie régionale. En effet, sa prise de position à l'endroit de l'approche plus classique attachée à l'idée de synthèse est drastique parmi les géographes québécois établis de l'époque. Un texte lourd de sens, publié par Trotier en 1962 dans *Recherches sociographiques*, aide en partie à saisir ce qui distingue la classe de géographes de la nouvelle génération. Reconnaissant malgré tout l'inestimable valeur documentaire des monographies de Raoul Blanchard – que beaucoup de géographes québécois (Brouillette, Dagenais, voire Hamelin) considéraient comme un maître – Trotier s'efforce d'en souligner les limites à grands traits : « Dans un sens, les travaux de monsieur Blanchard, qui ne débouchent pas sur des problèmes, ont peut-être rendu aux géographes canadiens-français un mauvais service, en leur donnant l'impression que tout était dit, et cela pas seulement sur les problèmes urbains. »[96] Déjà au début de la décennie, la question de l'organisation urbaine et de son importance dans les processus de structuration régionale, aspect quelque peu délaissé par les travaux classiques, nécessite une réforme de l'arsenal méthodologique; une réforme qui se justifie notamment par la normalisation, parmi la nouvelle génération de géographes canadiens-français, de l'applicabilité de la géographie dans le domaine l'aménagement.

Cette distanciation vis-à-vis des travaux blanchardiens détonne pour l'époque, comme en témoigne l'important hommage qui lui est rendu en 1959 par les CGQ avec la publication des *Mélanges géographiques canadiens offerts à Raoul Blanchard,* numéro recevant l'*imprimatur* d'une série de géographes, Hamelin et Dagenais en tête. Parties prenantes d'une génération de géographes ayant été formés auprès de Blanchard à Grenoble, ces agents influents de la géographie québécoise ont su préserver l'aura d'intouchabilité du maître jusqu'au tournant des années 1960.[97] Peut-être en réponse au mouvement dans lequel s'insérait Trotier, Dagenais, se référant à un rapport de « vénération que commandent une forte et sympathique personnalité ainsi qu'une œuvre de monumentale de pionnier »[98], écrit que, « quels que soient les renouvellements disciplinaires de la nouvelle génération, l'œuvre du maître conserve toute sa valeur exemplaire tant par la rigueur méthodologique que par les qualités de l'expression »[99], réaffirmant le bien-fondé de la forme disciplinaire qui était de mise jusqu'alors face aux intérêts des nouveaux entrants.

Au même moment, d'autres géographes universitaires, également formés dans le moule de la géographie classique, se montrent réfractaires à la trajectoire que semblent vouloir emprunter certains jeunes géographes, notamment en ce qui a trait à la spécialisation disciplinaire. C'est notamment le cas de Jean-Marie Roy qui, formé à Grenoble sous la direction de Blanchard,[100] devient le directeur fondateur du département de géographie de l'Université de Sherbrooke en 1963. En 1964, ce dernier plaide alors dans les pages des CGQ pour une reconsidération de la place de la spécialisation et de la planification en géographie. Insistant sur le fait que la géographie se situe « au carrefour de plusieurs sciences humaines et naturelles », ce dernier argue que c'est justement « au carrefour même que l'on a le plus de possibilités de se faire une vue d'ensemble ».[101] Demeurer dans cette position, si primordiale au regard géographique, constituerait l'une des difficultés de la pratique disciplinaire, qui plus est à une époque où l'applicabilité des connaissances semble s'imposer comme un critère d'utilité.

Faisant le procès de la place, selon lui disproportionnée, qu'occupent les « sciences auxiliaires » de la géographie (par ex. la climatologie ou la géologie), il réaffirme, suivant une démarche plutôt classique construite autour d'un idéal de synthèse, qu'une conception adéquate de la géographie doit mettre « en lumière son caractère global […] son unicité, son homocentricité ».[102] En ce sens, des disciplines comme l'urbanisme ou l'aménagement du territoire, que des intervenants tentaient de rapprocher depuis le début des années 1950, ne sauraient se soustraire au travail du géographe, puisqu'elles intègrent « une vue prospective […] dans un but normatif ».[103] Dès lors, cette tendance qui cherche à mettre la géographie au service de l'action correspondrait à une remise en cause de l'autonomie et du caractère distinctif de la géographie, en déviant par le fait même son objet vers lesdites sciences auxiliaires.

Néanmoins conscient de cette tension entre « le besoin de maintenir l'unité de la géographie […] et la nécessité de se spécialiser »[104], Roy considère qu'il en va de l'identité disciplinaire du géographe que de consolider le regard synthétique, laissant aux sciences auxiliaires envahissantes le soin d'agir dans le domaine normatif de la pratique et de l'application. Les géographes qui se spécialisent dans un domaine en vue de rendre le champ de leurs connaissances plus « applicable » courraient ainsi le risque de provoquer un déséquilibre. Nul ne saurait être compétent dans chacune des sciences auxiliaires qui abreuvent la géographie. Poursuivre dans cette direction signifierait perdre de vue l'idéal de synthèse, ce qui, aux dires de Roy, constituerait une véritable menace.

S'insurgeant contre toute prétention à la maîtrise globale de connaissances « spécialisées », ce dernier insiste sur le fait que :

> L'action du géographe doit s'arrêter là où sa compétence finit, c'est-à-dire au niveau de l'application. Ainsi un géographe pourra étudier avec compétence le régime d'un fleuve, son volume annuel, son module, les variations saisonnières et interannuelles du débit, l'importance et la fréquence des crues. Mais de là à pouvoir décider de l'établissement d'un barrage de retenue de telle ou telle capacité ou d'une centrale de telle ou telle puissance, la différence est énorme et je lui en refuse la compétence.[105]

Poursuivant sur cette lancée, il précise que le rôle de la géographie québécoise était avant tout de permettre la formation de professeurs compétents et que « ce serait trop demander à nos instituts que de former des spécialistes »[106], sans toutefois négliger la possibilité que la géographie puisse servir de base à la planification par la mise en relief des impératifs régionaux. Cette optique ne saurait être porteuse sans permettre au géographe de faire « son travail de géographe ».[107]

La prise de position de Roy témoigne d'abord et avant tout d'une lutte pour une conception du champ qui ne tient pas compte de l'institutionnalisation de la recherche comme processus marquant de la trajectoire disciplinaire. Cela traduit un conflit générationnel opposant des géographes formées aux approches classiques, générales et synthétiques, aux nouveaux entrants, rompus aux méthodes statistiques (et éventuellement à la modélisation mathématique), à la recherche appliquée et, plus simplement, aux nouvelles façons de concevoir l'espace régional. Cette opposition, ayant comme épicentre la place de la recherche dans la pratique de la géographie, laisse ainsi poindre un remaniement de ce qui peut être pensé comme allant de soi dans le champ, comme ce qui en est constitutif. Alors que la spécialisation constitue un dévoiement pour certains, il s'agit plutôt, pour d'autres, d'un impératif lié, très justement, à l'importance grandissante de la recherche scientifique comme moteur de disciplinarisation et partie prenante de l'habitus universitaire.

Conclusion

Dans cet article, nous avons tenté, par le prisme des habitus disciplinaires, de mieux comprendre les différentes façons de concevoir le rapport à l'objet de la discipline géographique, ses frontières, ses visées et ses orientations, et ce, à travers le discours d'agents s'étant prononcés dans les pages de revues nationales. Entamée au lendemain de la Seconde Guerre mondiale, l'institutionnalisation de la géographie a été conséquente jusqu'au tournant des années 1970. Comme nous l'avons vu, la question des frontières de la pratique géographique – de ce qui est considéré comme des pratiques acceptées et acceptables – a suscité le débat et a fait intervenir des agents aux profils singuliers. Ces derniers, occupant des positions variées dans le champ, en fonction de trajectoires différenciées, ont été amenés à concevoir les conditions de l'autonomisation de la géographie en des termes qui parfois se sont opposés, puisant à même des habitus disciplinaires révélant les tensions et les transformations à l'œuvre dans le champ, notamment en ce qui a trait à la place grandissante de la recherche.

Au tournant des années 1940-1950, la conception d'une géographie à visée éducative et humaniste est bien présente. Ses tenants, que l'on pense à Aumont ou à Brouillette, constituent un groupe d'agents établis dans le milieu associatif, scolaire et universitaire. C'est ainsi qu'Aumont, alors professeur de géographie au Collège André-Grasset et président de la SGM, conçoit la place de la discipline au prisme de la culture de l'*honnête homme*. Pensée comme un complément à cet idéal culturel, la géographie constituerait un atout de premier ordre pour l'Homme du XX^{e} siècle. En cohérence avec son statut de « discipline de

mémoire », la géographie demeurerait empreinte d'un idéal d'érudition où la connaissance se suffit à elle-même. Se référant à l'idée que la géographie trouve sa place au cœur de l'éducation libérale, Brouillette, quant à lui, reproduit à son tour une forme d'idéal culturel selon lequel la pensée éclairée devient un droit. Cette conception, s'inscrivant dans l'enseignement classique, est notamment critiquée par Décarie, qui y voit les traces d'une « sclérose scolastique ». Malgré ces oppositions, l'idée que le travail de synthèse se situe au centre de la réflexion géographique subsiste, comme en témoigne le rapport qu'entretiennent tour à tour les Dagenais, Hamelin et Roy, aux contours de la discipline, c'est-à-dire au corpus plus classique d'idées attaché à la démarche synthétique que représente notamment l'œuvre de Blanchard.

Bien qu'elle fasse l'objet de reconsidérations, la place accordée à la synthèse dans l'habitus disciplinaire demeure prégnante, et ce, même à l'approche des années 1960. D'une certaine façon, celle-ci a permis de rationaliser le potentiel d'utilité de la géographie, tant chez les agents actifs dans le milieu professionnel que ceux issus du champ académique. Se développe ainsi, au Canada français comme ailleurs, un discours visant à promouvoir l'utilité des connaissances et de la démarche géographiques, notamment dans le domaine de l'aménagement. Dans ce contexte, des géographes établis dans le milieu universitaire et dans la fonction publique des années 1950 ont fait valoir leur capital de connaissances par l'entremise d'une rhétorique de l'utilité, qui dans ce cas-ci nourrit un discours sur le bien-fondé d'une géographie appliquée et sur ce qu'elle peut apporter à la géographie générale. Il est impératif de noter que les géographes du milieu professionnel, se positionnant à titre de géographes, pensent l'utilité des savoirs géographiques hors du champ de la géographie en maintenant une identité sociale distincte préservant discursivement l'autonomie de la géographie.

Dans cet élan de normalisation des liens entre géographie et planification, on note, par le truchement de l'entrée dans le champ d'une nouvelle génération de géographes, l'émergence d'un discours cherchant à insuffler une rigueur scientifique à la démarche géographique. Des géographes promeuvent ainsi l'usage des nouvelles approches quantitatives, ce qui permet de réorienter la focale disciplinaire sur de nouveaux objets (ex. les villes), concepts (ex. espaces, réseaux, distance, hiérarchie) et méthodes (ex. méthodes quantitatives). L'émergence de l'étude des relations spatiales remet ainsi en cause l'idée de synthèse régionale telle que pensée par la géographie classique inspirée, entre autres, par l'œuvre de Blanchard. Cette problématisation de la synthèse constitue aux yeux de certains géographes des générations précédentes l'une des menaces qui pèsent sur la discipline. Combiné à l'élan de spécialisation que l'on associe au renouveau méthodologique et au développement des domaines d'application de la géographie, cet effritement de la position dominante de l'approche synthétique traditionnelle viendrait mettre à mal l'identité de la discipline et, par le fait même, l'autonomie de la géographie telle que perçue par les agents plus orthodoxes.

Les débats qui ont émergé au cours des deux décennies suivant la création des premiers instituts de géographie au Québec font écho aux soubresauts que

connaît la discipline ailleurs (ex. France, Royaume-Uni, États-Unis). Loin de prétendre mettre au jour cet état de fait largement documenté, la présente étude contribue toutefois à une meilleure compréhension des positions et des lignes de faille de différents agents actifs dans le champ de la géographie au Québec, qui, à partir des années 1970, donneront lieu à un malaise, pour reprendre la formule consacrée. Sur le plan de la publication, ce malaise coïncide avec la refonte complète de la RGM (la nouvelle mouture de la RCG à partir de 1964), qui prend le nom de *Géographie physique et quaternaire* en 1977, devenant ainsi une revue exclusivement dédiée aux sciences naturelles. Simultanément, la géographie humaine prend le chemin de l'Université Laval, où les CGQ délaissent ce qui relève de la géographie physique. Ces évènements constituent un exemple fort d'autonomisation des marchés de consommation de biens symboliques, consacrant la fracture du champ de la géographie (humaine d'une part, physique de l'autre), au Québec comme ailleurs.

Que l'on pense à la reconsidération de la place des études régionales « classiques », au débat autour de la valeur des approches généralistes et de la spécialisation des études géographiques ou encore à la remise en cause du caractère fondamental ou non appliqué de la géographie, les registres du débat auront, à terme, profondément transformé la structure de la discipline, ses cadres méthodologiques comme ses orientations générales. Si des géographes comme Anne Gilbert ont pu faire état d'une résurgence de la géographie régionale sous de nouveaux atours[108], force est d'admettre le caractère irrémédiable des remises en cause ayant eu cours dans le champ de la géographie entre les années 1940 et 1960.

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Endnotes

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Tracking the Fossil Footprints and Letters of Science from Doctor E. F. Harding in Windsor, Nova Scotia: 1842–1855

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Abstract: *Three hand-written letters from Dr. Ebenezer Fitch Harding to J. W. Dawson between 1845 and 1855 provide an example of the "collective" aspect of early geology. Dr. Harding was a community physician in Windsor, Nova Scotia, when he accompanied Charles Lyell during Lyell's visit to the geology sites and mud flats of the Minas Basin, Bay of Fundy in the summer of 1842. The three letters span the period at the dawn of Nova Scotia geology and give insight into Dr. Harding's personal interest, contributions to science, and relationship with Dawson in Pictou, Nova Scotia. Examination of the transcribed letters document this important period in Nova Scotia geology, demonstrate linkages between Nova Scotia and Edinburgh, and suggest future work to consider the development of the visual language of geology in Nova Scotia. The history and status of a fossil trackway named by Dawson as Hylopus hardingi provides further insights into the nature of collections and collaborations between Harding and Dawson.*

Résumé : *Trois lettres manuscrites du Dr Ebenezer Fitch Harding à J. W. Dawson, entre 1845 et 1855, fournissent un exemple de la nature « collective » de la géologie naissante. Le Dr Harding était médecin à Windsor, en Nouvelle-Écosse, lorsqu'il a accompagné Charles Lyell lors de sa visite des sites géologiques et des vasières du bassin Minas, dans la baie de Fundy, à l'été 1842. Les lettres couvrent la période de l'aube de la géologie en Nouvelle-Écosse et donnent un aperçu des intérêts personnels du Dr Harding, de sa contribution à la science et de ses relations avec Dawson à Pictou, en Nouvelle-Écosse. L'examen des lettres transcrites documente cette période importante du secteur de la géologie en Nouvelle-Écosse, démontre les liens entre la Nouvelle-Écosse et Édimbourg, et permet de considérer le développement du langage visuel de la géologie en Nouvelle-Écosse.*

Keywords: Citizen Science, History of Geology, Nova Scotia, John William Dawson

> The year 1842 forms an epoch in the history of geology in Nova Scotia. In that year Sir Charles Lyell visited the province, and carefully examined some of the more difficult features of its geological structure, which had baffled or misled previous inquirers. Sir Charles also performed the valuable service of placing in communication with each other, and with the geologists of Great Britain, the inquirers already at work on the geology of the province, and of stimulating their activity and directing it into the most profitable channels.[1]

Marking geologist Charles Lyell's first extended visit in 1842 as the dawn of a new epoch in Nova Scotia geology, J.W. Dawson in his book *Acadian Geology*—itself a monumental accomplishment for the science and culture of geology in the province—recognized that Lyell's visit spurred the growth of a nascent geological community. Dawson intended the book to further act as a bridge, to

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provide citizens of Canada's maritime provinces[2] with "a popular account of the more recent discoveries in the geology and mineral resources" of their region, highlighting that Nova Scotia was "a very interesting portion of the American continent."[3] Charles Lyell's visits and Dawson's *Acadian Geology* bookend an especially productive period of geological inquiry and community-engaged science in Nova Scotia.

Recent work in this journal has examined the diffusion of Charles Darwin's concepts of evolution among Nova Scotia natural scientists after publication of Origin of Species in 1859.[4] This article focuses on the preceding period, between 1842 and 1855, when the modern geology worldview of an ancient earth was becoming popularized through the work of Charles Lyell and citizen scientists working in Nova Scotia.[5] Interest in Nova Scotia geology had initially focused on mineral studies by New England geologists from 1822 through 1835. When Charles Lyell published the *Principles of Geology* in 1830-1833 it inspired a growing interest in the geology of Nova Scotia, and the emergence of a collaborative scientific culture among the physician-geologists of the Minas Basin and workers in the coal fields of Pictou and Cape Breton. Geological formations were increasingly recognized as being ancient rocks that represented records of ancient life. When Lyell arrived in Nova Scotia in 1842, as described in his *Travels in North America,*[6] the components of a 'collective' culture of geology were well at hand.

This article focuses on this emerging culture in Nova Scotia, particularly how it was generated by citizen scientists in and around Windsor and the Minas Basin: it is evidenced in three letters written by a physician-geologist, E. F. Harding, to J. W. Dawson, between the time of Lyell's visit in 1842 and Dawson's publication of first edition of *Acadian Geology*. Dawson and Harding were at the centre of a new collaborative enterprise in geology that citizens, regional and international scientists, and institutions of science created in the province in the mid nineteenth century.[7] Within this culture, the city of Edinburgh appeared as a locus of common educational training for Nova Scotians, as well as the production of geological knowledge and theorizing, as personified in Charles Lyell. This project is part of a larger review of Nova Scotia geology (1820-2020) that considers the 'culture of geology' and its impact on the culture of geology in Britain.[8] These letters suggest, in this historical context, how that culture came to be.

Nova Scotia Geology 1820 – 1840

The foundations of the culture of geology in Nova Scotia was 'collective' in several ways. Studies were based on *collections* of samples obtained during field examinations, but geology was also collective in that this work was often a *collaborative* activity shared among groups of individuals who shared an interest in geology knowledge. As well, the Mechanics' Institutes established in Nova Scotia were social institutions established for the collective learning of members and the general public. Individuals specializing in geoscience also established

personal networks with local citizen-scientists to share information through letters and exchanging of collected specimens. These popular and academic foundations in the science of geology in Nova Scotia would be followed by strategic development of public museums and university programs as well as growing economic and political interest in geology exports in the second half of the nineteenth century.[9]

Between 1820 and 1840, the history of Nova Scotia geology was greatly influenced by contributions from New England geologists. The earliest description of mineral collecting sites in Nova Scotia traces back to reports from Solomon Thayer from Maine. Thayer visited several sites in the Basin of Mines (now Minas Basin, Bay of Fundy) between 1818 and 1822, and Thayer's letters were then tabulated and published by Parker Cleaveland in 1822.[10] Travelling into the Bay of Fundy during the Age of Sail was an incredible adventure, with powerful tides that we now recognize as the highest on the planet. Names of the landmarks for the sailing vessels which made their way into the busy shipping port of Windsor, Nova Scotia, acknowledge the dangers of the area, including Cape Split where the tidal rip forms whirlpools and shearing waves, and the famous Cape Blow-Me-Down (now Cape Blomidon) that was the backdrop to life in the Land of Evangeline.[11]

From Boston, Charles Jackson and Francis Alger followed up on Thayer's initial surveys with several visits to Nova Scotia in 1826, 1827, and 1829. Jackson was studying medicine but spent summer vacations in Nova Scotia with his friend Francis Alger collecting minerals and studying the regional geology. Alger had already visited Nova Scotia with his father looking for iron mines.[12] Jackson and Alger's work resulted in the earliest published fossil from Nova Scotia (*Asaphus crypturus,* Green 1834), the first geological map of Nova Scotia and publication of picturesque depictions of the coastal geology exposures. [13] While in Nova Scotia, Jackson and Alger visited and communicated with Thomas Haliburton, the prominent judge and author who lived at Clifton on the hill overlooking Windsor. Jackson and Alger's work immediately inspired a group of students and professors from Williams College in Williamstown, Massachusetts, to visit Nova Scotia in the summer of 1835. The Williams College trip included visits to Windsor and the detailed description of the trip was published Boston travel writing. They explored the local geology, and described in detail their travels, meeting local dignitaries and visiting geology sites.[14]

At the same time, local geological knowledge was growing in Nova Scotia, primarily in areas with mines. Windsor's gypsum quarries attracted attention from local geology enthusiasts while coal mines around Pictou and Sydney offered opportunities to develop knowledge about coal formations and the industry that developed around their exploitation.[15] This work was summarized within Thomas Haliburton's "Statistical and Analytical Account of Nova Scotia" published in 1829 with a large fold-out map in the first volume, and in the second volume, a summary of the "Geology and Mineralogy of Nova Scotia"[16] written by Robert Brown of the province's General Mining Association.

Outside the operation of local mines, Abraham Gesner (1797-1864), a physician in Parrsborough (now Parrsboro), was also actively studying the local geology and published his "Remarks on the Geology and Mineralogy of Nova Scotia" in 1836.[17] Soon after publication, Jackson and Alger made repeated appeals to Nova Scotian officials with claims Gesner had plagiarized their work.[18] Regardless, Gesner mentioned several influential sources (Jameson, Cleveland, Sternburg, Buckland and Cuvier) for "his" work, and went on to say: "But it was the task of Mr. Lyell, to collect the scattered fragments of Geological Science, and erect a beacon to guide the wandering student in the path of philosophical truth, and to solve those difficulties theoretical writers had thrown in the naturally obscure way."[19]

Some of the difficulties Charles Lyell had solved included the nature of the geological evidence attributed by some to the great deluge of Moses (diluvium). Aligning with a scriptural interpretation, in 1828 Jackson and Alger had noted large boulders on the Nova Scotia landscape they supposed were "transported hither by that great and sudden catastrophe, which has almost every where left such incontestable proofs of its violence."[20] In the final version of their report, Jackson and Alger referenced Rev. William Buckland's brief description of large granite boulders sitting on top of slate in Nova Scotia[21] as evidence in "support of the diluvial current" and noted that while they had not seen any "furrows or parallel scratches upon the surfaces of rocks" in Nova Scotia that "such may reasonably be expected in a country like this, where the boulders so fully attest the occurrence of that event".[22] With the publication of Charles Lyell's three volume treatise on the "*Principles of Geology*" from 1830-1834, he countered the Biblical interpretations of geology by popularizing James Hutton's theory of uniformitarianism, and postulated that the diluvial geology was the result of transport by floating ice rather than a great flood.

Charles Lyell (1797-1875), born to a wealthy Scottish family obtained an M.A. in classics from Oxford in 1822, had become a prominent geologist in Britain in the 1830's. Lyell had received the Royal Society Medal in 1836 and was the President of the London Geological Society in 1837. It was this recognition that resulted in Lyell's invitation to visit North America to deliver the Lowell Institute public lectures between 1841 and 1843, and 1852.[23] During Lyell's return trip to Britain in July of 1842 he decided to stop in Nova Scotia for a month to explore the region's geology.[24] It was during this visit to Nova Scotia that Lyell met many local Nova Scotian geologists, including Dr. Abraham Gesner, Dr. Ebenezer Harding and John William Dawson. Dawson, having begun his academic training in geology was then mentored by Lyell and supported by collaborations with local citizen physician-geologists.

John William Dawson (1820–1899)

J. W. Dawson was born in Pictou in 1820, spent his youth working in the printing shop run by his father, James Dawson, and established his strong interest in natural history during his early years of education at Pictou Academy

(1833-39).[25] As a student of Thomas McCulloch, Dawson was also encouraged to present a paper at the Pictou Literary Society titled "On the Structure of the Earth" when he was only 16 years old. Dawson pursued his interest in fossil and natural history, assisted in his interests with help from people like Dr. Abraham Gesner, and on the other shore of the Minas Basin, Isaac Chipman in Horton. Dawson then studied geology, taxidermy and geological thin sections at the University of Edinburgh from 1840 to 1841, before family financial challenges forced him to return to Nova Scotia.[26]

Edinburgh was significant for Dawson's education in geology and he returned again in 1847 to complete additional training on microscope methods. At this time Dawson also commissioned his "Map of Nova Scotia and Prince Edward Island," a lithograph created by W. Nichol & Co., Edinburgh, which was then printed in Nova Scotia by James Dawson in 1848 to accompany the first edition of his popular *Hand Book of Geography of Nova Scotia and Prince Edward Island*. The importance of this early work is demonstrated by the fact that the map and the "Hand Book" were displayed among the Nova Scotia exhibits at the 1851 Great Exhibition in London.[27]

Following the important visit of Charles Lyell, Dawson came into frequent contact with Ebenezer Harding, a doctor in Windsor: three letters over a ten-year period from Dr. Harding to Dawson in the Redpath Archives (transcribed by the author, Appendices 1-3 https://cstha-ahstc.ca/scientia-canadensis/tracking-the-fossil-footprints-appendices/) exemplify this correspondence. These letters highlight the importance of citizen-engaged science demonstrating how Harding provided Dawson specimens and shared field observations that contributed to Dawson's seminal work, *Acadian Geology* and its important geological map. In contrast to the government geology surveys that were carried out in New Brunswick by Gesner in 1838 and the establishment of the Geological Survey of Canada with William Logan in 1842,[28] the letters provide an example of the network of citizen geologists in the early history of geology in Nova Scotia that was critical for the development of local expertise that contributed to a growing international science.

Dr. Ebenezer Harding and Citizen Science

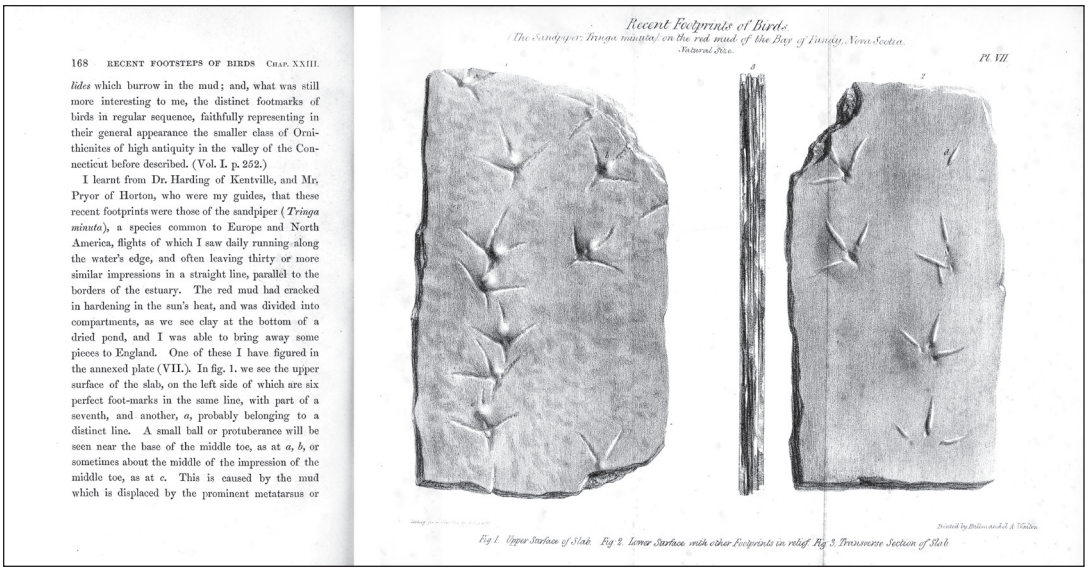
Throughout the history of geology in Nova Scotia, physician-geologists have pursued interests in natural sciences and made significant contributions to the science of geology.[29] Prominent examples include Dr. Abraham Gesner, a physician in Parrsboro from 1826 through 1836 who published many significant contributions;[30] Dr. William Webster, a physician in Kentville from 1830s to 1861; and, the subject of this article, Dr. Ebenezer F. Harding (**Figure 1**), the physician in Windsor from 1823 until 1860. Harding was born in Wolfville, Nova Scotia, on August 20, 1799, the son of Rev. Theodore S. Harding, a Baptist Minister in Wolfville for 60 years. Harding attended the Pictou Academy, established in 1811 by Thomas McCulloch. The Academy was formally recognized by the Nova Scotia Assembly in 1816, and by 1817 had 53 boys enrolled.[31] A

Figure 1. *Photograph portrait of Dr. Ebenezer Fitch Harding from Nova Scotia Archives (citation), and scan of original letter from Dr. Harding to J. W. Dawson, April 16, 1855. McGill University Archives, MG1022_ Acc2211-177_04-16-1855*

young Ebenezer Harding was one of these early students at Pictou Academy as had been John Dawson.

After graduating from the academy, Harding studied medicine, initially as apprentice with Dr. Anderson in Halifax and then with Doctor Robert Bayard in Kentville. Harding finished his training at the College of Physicians and Surgeons of New York, graduating in 1822.[32] Returning to Nova Scotia, Dr. Harding began practicing medicine in Kentville in 1823. Encouraged by Thomas Haliburton, Harding moved to Windsor in 1831 where he worked as a doctor and dentist, until his death in 1860. Dr. Harding was a highly engaged citizen; he served as a member of the Board of Directors of the Nova Scotia Baptist Education Society; as Clerk of the Peace for Supreme Court in Windsor; as Postal Clerk; and was a Founding Member of the Medical Society of Nova Scotia in 1854.[33]

Working as a country doctor, Harding also provided training to students, including Charles Tupper (1821-1915) who apprenticed with Dr. Harding in Windsor between 1839-1840 and then attended school in Edinburgh where he received a diploma from the Royal College of Surgeons of Edinburgh in April 1843.[34] Tupper wrote fondly of his memories of working with Harding. After completing his medical training in Edinburgh, Tupper returned to his home town of Amherst, Nova Scotia, and established his own practice as a medical doctor and dentist.[35] Tupper then entered politics in 1856 as provincial secretary at a critical period for the province and country, and this same year Tupper played a central role in Nova Scotia establishing its mineral rights previously held by the monopoly of the General Mining Association.[36] Charles Tupper's strong relationship with Dr. Harding, Tupper's time in Edinburgh and his role in obtaining the mineral rights, establish linkages between the local physician-geologists and the political spheres of the province during the establishment of the culture of geology in Nova Scotia.



168 RECENT FOOTSTEPS OF BIRDS CHAP. XXIII.

lides which burrow in the mud; and, what was still more interesting to me, the distinct footmarks of birds in regular sequence, faithfully representing in their general appearance the smaller class of Ornithichnites of high antiquity in the valley of the Connecticut before described. (Vol. I. p. 252.)

I learnt from Dr. Harding of Kentville, and Mr. Pryor of Horton, who were my guides, that these recent footprints were those of the sandpiper (*Tringa minuta*), a species common to Europe and North America, flights of which I saw daily running along the water's edge, and often leaving thirty or more similar impressions in a straight line, parallel to the borders of the estuary. The red mud had cracked in hardening in the sun's heat, and was divided into compartments, as we see clay at the bottom of a dried pond, and I was able to bring away some pieces to England. One of these I have figured in the annexed plate (VII.). In fig. 1. we see the upper surface of the slab, on the left side of which are six perfect foot-marks in the same line, with part of a seventh, and another, *a*, probably belonging to a distinct line. A small ball or protuberance will be seen near the base of the middle toe, as at *a*, *b*, or sometimes about the middle of the impression of the middle toe, as at *c*. This is caused by the mud which is displaced by the prominent metatarsus or

Recent Footprints of Birds.

PL. VII

Fig 1. Upper Surface of Slab. Fig 2. Lower Surface with other Footprints in relief. Fig 3. Transverse Section of Slab.

Figure 2. *Charles Lyell's "Travels in North America" page 168 mentions Dr. Harding and observation of the modern Sandpiper footprints, and fold-out Plate VII faced it displays a lithograph of both surfaces and sideview of a slab of dried Bay of Fundy mud. The depiction of the modern footprints preserved in a dried slab of Bay of Fundy mud represented a eureka moment for Lyell and Dr. Harding was present as a witness.*

Dr. Harding's interest in geology before 1842 is unknown, but as a physician-geologist, Harding travelled around Windsor and communicated regularly with Dawson about Albion Mines, Pictou. Harding also contributed significant fossil discoveries and assisted visiting geologists to better understand the complex geology of the area. It is unknown how they were introduced, but in 1842, Harding accompanied Charles Lyell along the shore of the Bay of Fundy during Lyell's visit to Nova Scotia, which Lyell noted, mentioning Harding by name, in his popular book *Travels to North America*. [37] Harding and Mr. John Pryor (a founding member of Acadia University) were with Lyell when he observed a sandpiper walking in the Bay of Fundy mud, leaving a distinct trackway in the soft-muddy sediment (**Figure 2**). This observation was significant as it provided him a modern analogue to explain the process of the development of fossil footprints that he'd seen elsewhere in Eastern North America. Interpreting geology through study of the present geological processes was a foundational concept for Lyell in the *Principles of Geology*.

Charles Lyell in Nova Scotia

On July 31, 1841, Charles Lyell briefly stopped into Halifax during his trip from England to Boston: "I landed here for six hours, with my wife, during which we had time to drive about the town, and see the museum, where I was shown a large fossil tree filled with sandstone, recently sent from strata containing coal in the interior. I resolved to examine these before returning to England, as they appeared by the description given to us, to afford the finest examples yet known in the world of petrified trees occurring in their natural or erect position." [38] The Halifax Mechanic's Institute was the only Museum

that Lyell and his wife could have visited during their afternoon in Halifax, although there is no mention of the esteemed visitor in the notes of the Institute for that year.

Lyell returned to Nova Scotia in July of 1842, but the summer of that year was a challenging economic situation in Nova Scotia. The Halifax Mechanics' Institute did not meet at all between May 11 and August 27, and the members spent the next several meetings planning lectures for the upcoming year and briefly considered a proposal to organize a bazaar.[39] Unfortunately, they had not recognized the opportunity to engage with Lyell during his 1842 visit. It was the physician-geologist Doctor Harding, son of a prominent Baptist Minister, and John Pryor, Professor of Queen's College who literally walked in the footsteps of Charles Lyell on the beach of the Bay of Fundy.

Doctor Harding was present to share in Lyell's moments of insight while walking along the shores of the Bay of Fundy, with the three letters from Harding to Dawson providing new information about Lyell's visit in 1842 and the publication of *Acadian Geology* in 1855. The historical documentation of these collaborations and travels provide insight into the regional community networks at the time.

Between 1830 and 1850, Windsor was an active and important transportation route between Nova Scotia and Saint John, New Brunswick. In 1833, the "Maid of the Mist" became the first steamer mail packet between Windsor and Saint John,[40] which decreased travel time between Halifax and Saint John to 24 hours. Compared to travelling by bumpy carriage rides along "the Great Roads" between Halifax, Truro, Amherst and Saint John, the Minas Basin was a more popular transportation route. With the government financially supporting a packet route, Dr. Harding also acted as a Postal Clerk at Windsor starting in 1835. He reported that "the Parrsborough Packet has made routine voyages between Windsor and Parrsborough as according to regulations of the Court of Sessions."[41] This role provided him the opportunity to observe features in geological materials from the region while inspecting items on the ships. It was on such a visit to the Windsor wharf that Dr. Harding likely came upon a slab of stone shipped from Parrsboro and noticed a trackway of fossil footprints.[42]

It is not surprising that Dr. Harding would examine geological material that had come from Parrsboro. The two communities were strongly tied through the shipping activity of the Minas Basin. The name of the basin is a secondary derivation of the English "Bason of Mines,"[43] translated from the original (1764) French name "Bassin des Mines,"[44] referring to the abundant coastal exposures of geological formations that were sources of copper and gypsum. Between 1830 and 1850, the shipping packets that travelled from Windsor through the Minas Basin provided an important linkage for trade (plaster, lumber, etc.) to Saint John, New Brunswick.[45] Parrsboro was often a stop along this route, and other smaller packets also travelled across the Bay of Fundy that provided additional routes. Abraham Gesner practiced medicine in Parrsboro from 1826 to 1836, and spent his free time roaming the coastal shores and riverbanks. The

region also attracted geologists from outside Nova Scotia. The period from 1852 through 1855 also saw a young Othniel Charles Marsh spending his summer vacations in the Minas Basin collecting minerals with his friend William Park. Marsh's trips are documented in his weekly diary, including a note that Marsh had stopped in to see Harding when in Windsor on his return to Andover in 1855. Marsh eventually published his summary of mineral collecting sites in 1863.[46]

In the 1840s, education institutions in and around Windsor began to support the study of geology and the emergence of a culture of geology. Both King's College, established in 1789, and Acadia University, founded in 1838 in nearby Wolfville, attracted scientists and created geology programs. King's College had earlier dedicated few resources to geology until it hired Edinburgh-trained Henry How to teach chemistry and natural history in 1854. How went on to collaborate with Dawson and made significant contributions to the mineralogy of Nova Scotia. At Acadia University, Isaac Chipman established a geology program, leading students out into the field to collect minerals before dying tragically on one such trip in the Minas Basin.[47]

The development of a collective culture in geology was also aided by other public institutions dedicated to disseminating knowledge. These institutions included natural history societies, such as the Pictou Literary and Scientific Society (1834-1855) established by Dawson's teacher and mentor Thomas McCulloch and Mechanic's Institutes.[48] Mechanics Institutes were first formed in Canada in the late 1820s s to provide instruction to workers, but catered more to the middle classes, inculcating an interest in science, including geology.[49] While Windsor was home to a Mechanic's Institute in 1842, it was the Halifax Mechanics Institute that advanced geology when it commissioned Titus Smith to conduct a summary of Nova Scotian geology and make a representative collection of rocks and minerals. The Institute published Smith's report in 1834, which was then republished in 1836 in the Magazine of Natural History.[50] This direct citizen-engagement in the early history of science in Nova Scotia provided a conduit for public adoption of new scientific worldviews, in particular Charles Lyell's views on geological time advanced in his *Principles of Geology*.

Letters of Geology

I became interested in Dr. Harding's history after studying a fossil footprint site in Parrsboro in 2015. Hoping to learn more about the sites where previous footprints had been found, I located Harding's three letters in Dawson's files at the McGill University Archives. The letters have now been transcribed (Appendices 1 to 3 https://cstha-ahstc.ca/scientia-canadensis/tracking-the-fossil-footprints-appendices/) and the information in the letters lead to the wider examination provided here. Although the letters did not contain new information about fossil footprint sites, they do provide a frame to consider the "collective" aspect of this critical time in Nova Scotia geology.

The letters demonstrate interactions between rural communities in the 1840s,

with Dr. Harding in Windsor and William Dawson located in Pictou. In 1845, Harding noted his letter would be carried by Thomas Randall, who happened to be travelling from Windsor to Albion Mines. The letter of 1847 was carried along with mineral and shell specimens by Rev. DeWolf. These were not regular postal routes, but rather Harding and Dawson relying on messages being delivered by those who were travelling between the two busy port towns. There was a period of road building between 1815 and 1850, providing increased overland transportation by horse-carriage, but the train between Windsor and Halifax did not begin until 1858.[51] The letter from Harding to Dawson written on April 16 (**Figure 1**) represents an early stage of postal history in Nova Scotia, as it includes stamps in Windsor (April 17), Halifax (April 18) and Pictou (April 19).

The first letter (July 28, 1845) was sent three years after the visit by Charles Lyell. In it Dr. Harding mentions the previous receipt of a letter from Dawson, and there being some delay in Harding's reply. Harding's letter also mentions a recent missed opportunity for the two to meet and "explore sites of interest to the geologist." Harding had gone to meet Dawson at "Mr. Brass's" (Hotel), but Dawson had already left.[52]

This first letter also mentions Harding's interest in shells of Nova Scotia, and he requests representative samples that Dawson might be able to spare. This is a topic that Harding returns to in all three letters, so represents a strong personal interest. Dr. Harding appears to have been establishing a representative shell collection and seeking information lists and extra specimens that Dawson might provide. Unfortunately, any shell collection that Harding established remains unknown. It would not be until 1859 that John. R. Willis (1825-1876), Principal of the National School, Halifax, establish a representative collection of shells in Nova Scotia.[53]

In the 1845 letter, Dr. Harding also provides a report of the investigations he had recently made walking up the banks of Halfway River and while visiting a site at Snides Mill. The details in Dr. Harding's letter provide geological observations of fossils and rock types, proposing correlation of strata between the two sites and noting the difference from gypsum deposits along the Avon. Charles Lyell also mentions visiting Snides Mill during his trip of 1842, stating: "I also found, in going southwards from Windsor to a small tributary of the Avon, on which is situated Snides Mill, that the gypsiferous series incloses, before its junction with the older rocks, course sandstones with a seam of impure coal two inches thick, also clay-iron-stone, and shales with *Lepidodendron elegans*, but no strata resembling the productive coal measures."[54]

Snides Mill was not found directly labelled or mentioned in any other historical maps or surveys. However, responding to my request for information about a historic mill located south of Windsor on a tributary of the Avon River, Jonathan Fowler shared a detail of a historic survey map produced in 1836 by Titus Smith.[55] An earlier map of the same area in 1818 by Wolford,[56] identifies the nearby "Burdain's Inn" but does not show a building at the site where a dam and "mill pond" shown in Smith's map in 1836 (**Figure 3**). The location

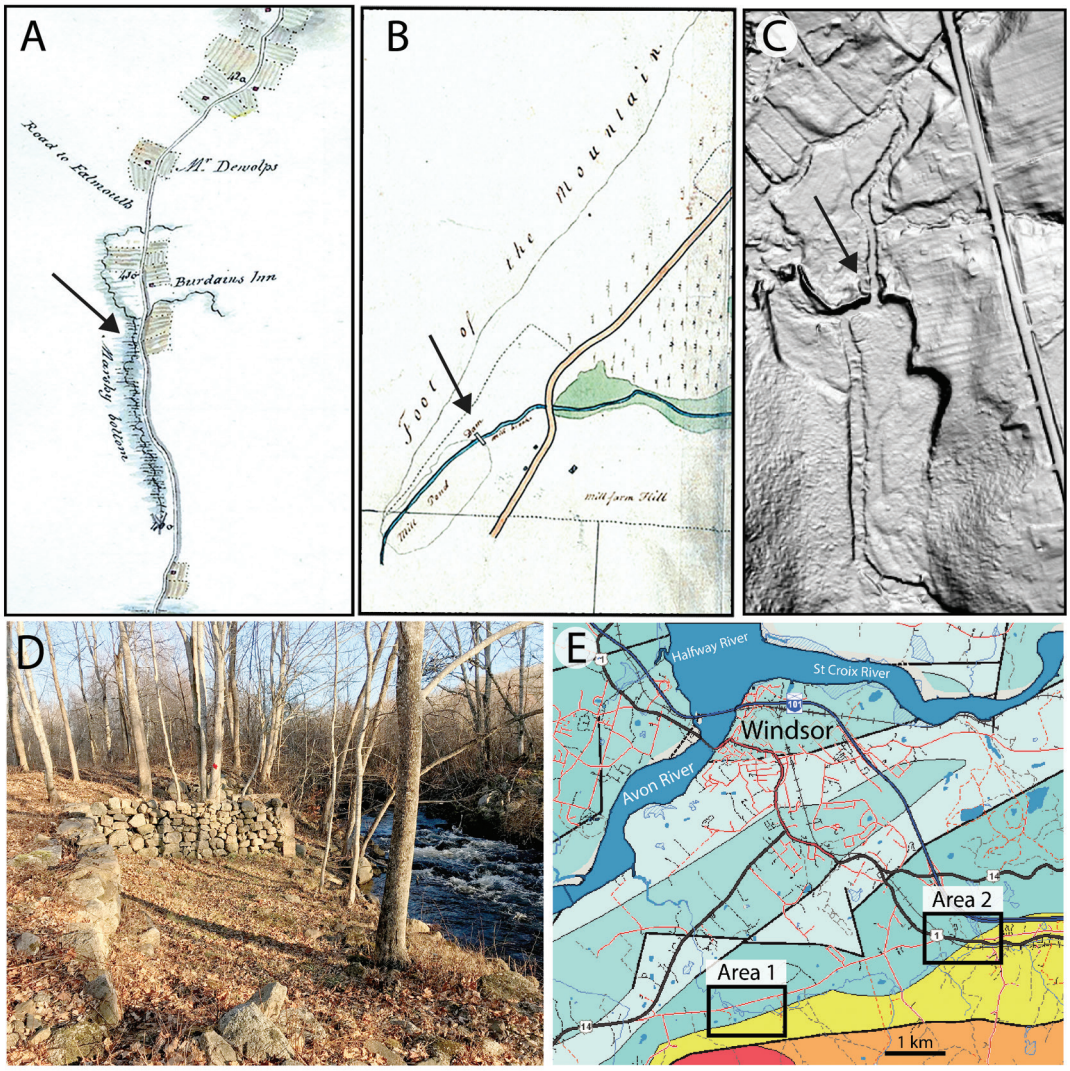


Figure 3. *The likely location of Snides Mill (arrows) mentioned by Lyell and described in Dr. Harding's letter (1847); shown on maps from, A - Wolford (1818), B) - Titus Smith Survey (1836), and C) modern hill-shade LiDAR that shows the foundation of the old mill that is still at the site (D). The modern geology map (E) shows the location of Snides Mill (Area 1) and the location "2 or 3 miles to the southern on the old road" (Area 2) that both have contact between the Horton Group (yellow) and Windsor Group (blue).*

of this unnamed mill corresponds with a modern hill-shade map that shows a foundation of a dam/mill at the end of the pond. This was later confirmed during a recent visit to the site where an old turbine wheel had been dredged from the river by a previous property owner.

Evidence to support this site as the location of "Snides Mill" is that the description of geology offered by Harding aligns very well with the geological details depicted in modern geology maps of the area (**Figure 3**). The geology at Snides Mill represents a contact between the Carboniferous Windsor Group limestones and gypsum deposits and the older Horton Group sandstones and shales. Another similar contact was described by Harding in the 1845 letter as "2 or

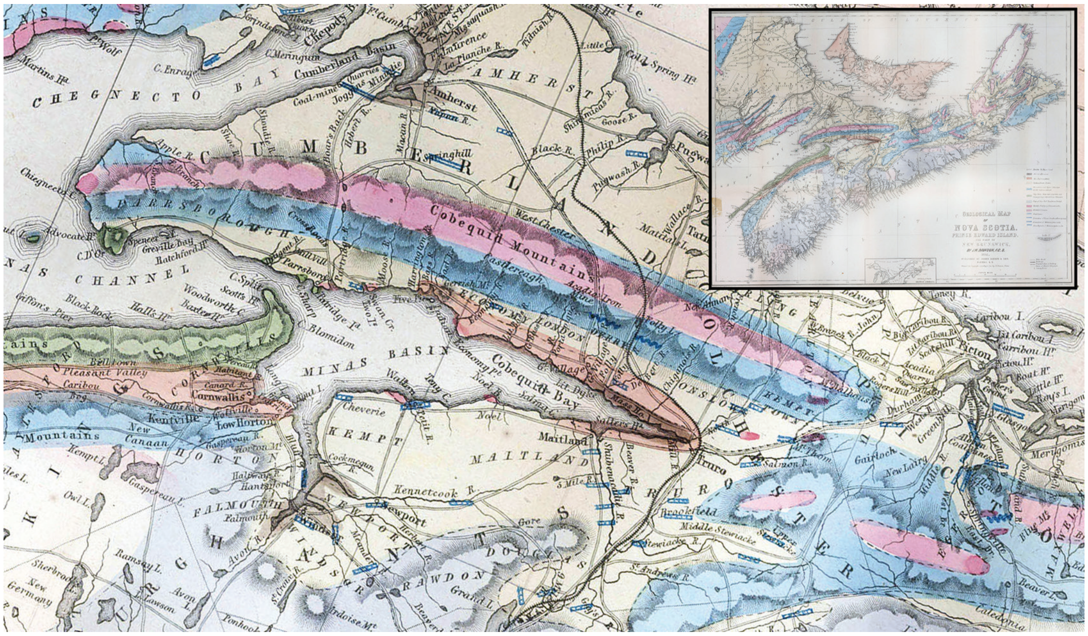


Figure 4. Detail of Minas Basin and Pictou areas from Dawson Geology Map of Nova Scotia and PEI, 1855. The information Dr. Harding provided to Dawson helped to inform the geology details mapped in the Windsor area.

3 miles to the southern on the old road, sandstones, quartzose grindstone and slates prevail". These types of observations are what informed Dawson's understanding of the spatial relationship of the beds in the area and informed the boundaries of the rock types he would eventually publish in his 1855 map (**Figure 4**).

Dawson returned to Windsor area to make additional geological studies after receiving Dr. Harding's 1845 letter. An image of "Part of Cape Blomidon, 1846" was drawn directly by Dawson, and includes two men in top hats seated in discussion at the base of the cliff. The drawing would have been done on-site by direct observation, and is evidence that Dawson was in the area (perhaps with Doctor Harding) in 1846 in between the two letters. Dawson's original drawings were then translated for printing by the intaglio artist William H. Lizars, a prominent printmaker in Edinburgh. The drawing demonstrates the importance of direct observation and drawing as part of Dawson's research and geology publications.

The second letter from Dr. Harding to William Dawson in August 1847, begins by noting specimens of the fossil shell *Orthoceras* that Harding is sending to Dawson. These specimens relate to the detailed descriptions that Dawson later provided in *Acadian Geology*. Harding ended the 1847 letter recognizing Dawson had sent a list of shells, and Harding listed names of some that he was particularly interested in obtaining. Several of the taxa listed by Harding are found in the list of "Molloscous Animals" that Dawson included in the *Hand Book of the Geography and Natural History of the Province of Nova Scotia* that he published in 1848. It was for this publication that Dawson had commissioned

his map of Nova Scotia and PEI that became the base map he also used for the geological map published in 1855. The list Dawson provided may also have related to fossil shells of potential interest to Harding, and was likely the list printed in the second volume of Lyell's *Travels in North America* published in 1845. The fossils listed by Lyell are significant for the history of paleontology in Nova Scotia and several of the specimens are located at the Natural History Museum, London.[57] These fossil specimens were collected by Lyell during his trip in 1842 and perhaps with Dr. Harding at his side.

The third letter from Harding to Dawson in August of 1855, mentions Edinburgh in terms of Dawson's interest in the opening as Professor of Natural History. Edinburgh would have been an exciting opportunity for Dawson's career, and demonstrates the linkages that had been established between Edinburgh and Nova Scotia geology through Dawson and others. Edinburgh connections included Dawson's time studying geology in 1840-1841 and again in 1847, and the production of the lithograph of Dawson's Map of NS and PEI. Dr. Harding's student, Charles Tupper, had studied (medicine) at Edinburgh during Dawson's time there, and his later political influence in Nova Scotia is of interest to the culture of geology during this period. It's also interesting to consider, Rev. David Honeyman (1817-1899), the first curator of the Nova Scotia Museum, grew up in the Dundee area and then preached in Glasgow and Edinburgh in 1841. One might imagine a public geology talk in Edinburgh in 1841, where Dawson, Tupper, and Honeyman could have all been in the audience together.[58]

Another important connection between Edinburgh and Nova Scotia geology was Doctor William Webster, who attended medical school at University of Edinburgh (c. 1818) before returning to Kentville to practice medicine. Webster was another active physician-geologist in Nova Scotia, who sent letters and specimens of modern rain marks and footprints to Lyell in 1847.[59] These letters and specimens Webster sent to Lyell were likely of a similar nature to those between Harding and Dawson. It is of interest to determine if similar letters from Webster to Lyell can be located among Lyell's archived materials. New work is being done to digitize Lyell's notebooks, recently purchased by the University of Edinburgh, which will provide valuable insights into the other people Lyell met and observations he made during his time in Nova Scotia.

Dr. Harding mentions the exciting opportunity that Edinburgh provided for Dawson's career, but also laments the potential loss for Nova Scotian science. It turned out that Dawson was not chosen to fill the position, but he still left Nova Scotia to take on his new role as Principal at McGill. The third letter from Doctor Harding is significant in his reference to the upcoming publication of Dawson's book (*Acadian Geology*), and an offer to help distribute copies among his fellow citizens with an interest in geology. The letter and offer represent a direct connection between the "collective" work of Dawson's book and Dr. Harding's interest in promoting it locally. It is unclear if the Windsor Mechanics' Institute was still active in 1855, but the members listed in 1842 would likely be included in those who Dr. Harding would have sold copies to.

The three letters that Dr. Harding wrote to Dawson provide insights into the collaborative relationship that existed between the two of them. The initial publication of *Acadian Geology* (1855) and a supplemental chapter in 1860 only briefly mention Dr. Harding in terms of the fossil footprints that he had found. Harding unfortunately died in 1860 before seeing Dawson's second revised edition (1868) that included expanded content and recognition of contributions from several physician-geologists, including Dr. Harding. Dawson recognized Harding's contributions through honorific species names, including the footprints identified as *Hylopus hardingi*, an invertebrate shell *Macrodon hardingi (*now *Parralelodon hardingi)* found in the Windsor area, and a fossil fish from Horton Bluff, *Rhizodus hardingi*. The naming of species in honour of Harding's contributions was formal recognition by Dawson of the collective culture that had been essential to his work as a geologist. Of all the specimens that Dr. Harding provided to Dawson, the footprints *Hylopus hardingi* are perhaps the most scientifically important, and also demonstrate how the study of this particular fossil was a collaborative process.

Hylopus hardingi

Unfortunately, the letters to Dawson do not mention the footprints Dr Harding had found among the shipment of stone from Parrsboro. However, Harding likely shared the information in a similar letter, relaying the information as part of their collective collaboration. Dawson described the story of Dr. Harding finding, in 1850, "Tracks of Reptilian animals, discovered at… Parrsboro" in his descriptions of the specimens.[60]

> In a bed near Partridge Island, Dr. Harding of Windsor found, several years since, a fine series of footprints, probably of a small reptilian animal.[61]

> Shortly afterward, Dr. Harding, of Windsor, when examining a cargo of sandstone which had been landed at that place from Parrsboro', found on one of the slabs a very distinct series of footprints each with four toes, and a trace of the fifth. Dr. Harding's specimen is now in the museum of King's College, Windsor. Its impressions are more distinct, but not very different otherwise from those above described as found at Horton Bluff. The rocks at that place are probably of nearly the same age with those of Parrsboro. I afterward examined the place from which this slab had been quarried, and satisfied myself that the beds are Carboniferous, and probably Lower Carboniferous. They were ripple-marked and sun-cracked, and I thought I could detect trifid footprints, though more obscure than those in Dr. Harding's slab. Similar footprints are also stated to have been found by Dr. Gesner, at Parrsboro.[62]

Lyell also mentioned Dr. Harding's discovery in his *Elements of Geology*.

> Footprints of two reptiles of different sizes had previously been observed by Dr. Harding and Dr. Gesner on ripple-marked flags of the lower coal-measures in Nova Scotia, evidently made by quadrupeds walking on the ancient beach, or out of the water, just as the recent Menopoma is sometimes observed to do.[63]

Although often overlooked in the history of science, a fossil trackway found by William Logan in 1841 at Horton Bluff, near Windsor, noted briefly in the Proceedings of the Geological Society of London in 1842 – was the first evidence

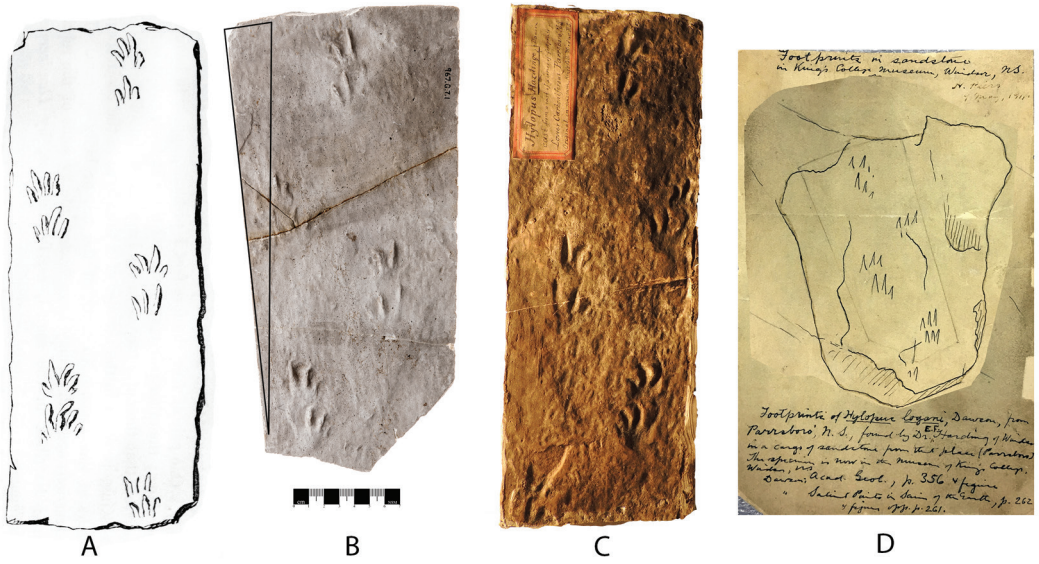


Figure 5. *Depictions and casts of Hylopus hardingi fossil footprint specimen: A – the first published figure of the specimen by Dawson in 1868; B - a plaster cast (mold) of the original specimen in the Geology Collections of the Nova Scotia Museum, NSM967GF7.1; C – a plaster cast at New Brunswick Museum, NBMG 3060; and D – a curatorial sketch of the original fossil specimen by Harry Piers (Curator of the NSM) seen at King's College on May 9, 1911. The NSM plaster cast is broken and missing an area on the bottom edge but it does record a small area (triangle) that is not recorded by the NBM plaster cast.*

of terrestrial (land, walking) animals existing in the Carboniferous.[64] Much later, in 1882 when Dawson described and named these tracks he eventually named them in Logan's honour, *Hylopus logani*. Following the discovery of footprints found by Logan in 1841, and Dr. Harding in 1850, Dawson and Lyell in 1852 then made the important discovery of terrestrial animals preserved in the tree stumps at Joggins.[65] When Dawson published his description and illustration of the footprints Dr. Harding had found he named them in his honour as *Hylopus hardingi* (**Figure 5a**).

Unfortunately, the location of the original rock slab with the fossil trackway of *H. hardingi* remains unknown, and the fossil was likely lost during the fire in the Science Building at Kings College in 1920. This is significant in that *H. hardingi* had become the type species for the ichnogenera. A plaster cast (mold) of the trackway (**Figure 5b**) remains in the geology collection of the Nova Scotia Museum, and a second plaster cast (**Figure 5c**) is at the New Brunswick Museum. It is interesting to think that these fossil footprints were reproduced from plaster made from the underlying gypsum deposits in Windsor; industry and artisan skills applied to science.

In a review of fossil footprints published in 1904,[66] George F. Matthew (1837-1923) provided a new illustration of the cast of *H. hardingi* trackway and noted that Dawson's diagram from 1863 (**Figure 5a**) had been developed from a rubbing of a cast provided by Henry How (1828-1879) who was a prominent Professor of Natural History and Chemistry at King's College from 1854 until he

died in 1879.[67] In 1904, Matthew also noted that Professor George T. Kennedy of King's College, had recently examined the original in the museum of the College. The original specimen was last seen at King's College Museum by Harry Piers on May 9, 1911, when he created a curatorial sketch of the specimen (**Figure 5d**). In February 1920, a large fire destroyed a portion of the campus of King's College – eventually leading to the campus being relocated from Windsor to Halifax and became Dalhousie University King's College. Dr. Harding's original fossil footprints appear to have been lost in the fire.

The history of *Hylopus hardingi* remains of importance for taxonomic ichnology, but also demonstrates how the collected specimen was then studied through plaster casts and documented with direct rubbing and illustrations. The collaboration that existed between Dr. Harding and J. W. Dawson can be traced through these specimens, the letters they exchanged, and the relationships that developed through collections that became stored at museums in local universities like King's College.

Conclusion

The letters from Dr. Harding to William Dawson provide insights into the initial collection of specimens and sharing of knowledge at an important phase of the culture of geology in Nova Scotia. The letters demonstrate Dr. Harding's primary interest in shell collecting, and include inventories of fossil specimens and descriptions of geology sites visited. The letters also refer to other people involved in the community of geology, providing future opportunities to expand the understanding of citizen science in this early phase of geology.

In referring to Dawson's opportunity for a Professorship in Edinburgh, the 1855 letter highlights the strong relationship that had been established between Nova Scotia and Edinburgh geological science. Dr. Harding also established an Edinburgh linkage through Charles Tupper who was at Edinburgh in overlapping years with Dawson. Professor Henry How was among the Edinburgh scene as well just before arriving in Nova Scotia, and the creation of Dawson's map in Edinburgh in 1847 that accompanied the publication of Dawson's "Hand Book" the following year, provided the foundation on which Dawson could depict his summarization of Nova Scotia geology.

Recognition of these important relationships between Edinburgh and Nova Scotia geology provide opportunities for future projects to study and add valuable information to historical collections and contributions to the history of science. It will be of value to examine the ongoing digitization of Charles Lyell's journals at the University of Edinburgh, particularly the journals from 1842, as well as comparing similar journals of Dawson at the McGill Archive. Future work is also being planned to examine the samples of rain drop prints and footprints in Bay of Fundy mud that Dr. Webster sent to Lyell, which will also expand on the scope of connections between Nova Scotia, Edinburgh, and the history of geology.

The letters mention historic sites of geological importance such as Snides Mill and Halfway River, areas where preliminary geological observations were made. By tracing descriptions of these sites, and references to local accommodations (Brass' Hotel, Burdain's Inn), the social aspects of travel and accommodations during Lyell's visits and Dawson's work making geological observations is shown. These hand-written letters—describing travel, observation of geology sites, and exchange of specimens and information—demonstrate the collective aspects, of collaboration and collections, in early geological investigations in Nova Scotia.

The development of the visual language of geology in Nova Scotia could also be explored in future research. The absence of any sketches, drawings, or maps in Dr. Harding's letters, strongly contrasts with Dawson's extensive use of images in the first edition of *Acadian Geology*. With Dawson's experience in his father's printshop, he had established strong visual communication skills. Dawson communicated geological observations with visual depictions of specimens, developed geology maps, and visual reconstructions of ancient ecological landscapes. Lyell's publication of *Travels in North America* inspired interest in Nova Scotia geology and included important lithographs depicting important mud samples observed by Dr. Harding and Lyell on his trips to Nova Scotia. The development of "map reading" in Nova Scotia is demonstrated by comparing the early hand-drawn survey maps of Windsor area, the earliest geological map of Jackson and Alger in 1833, the refinements made by Dawson in 1855, can be contrasted with the advanced digital media now available to examine Nova Scotia geology. Dawson's base map, originally produced in Edinburgh to accompany his *Hand Book* also provides interesting historical linkages with education and printing innovations of the time. Depiction of geological landscapes, like the Cliffs at Blomidon in 1846, demonstrate Dawson's skill and use of observation drawings, later translated into a intaglio images in Edinburgh.

Within the context of visual language of geology, it is also interesting to consider the important history of plaster casts of fossils used as primary scientific references. The early plaster casts produced at King's College acted as three-dimensional depictions of the rock surface, which were used to produce tracings that were then published as woodcut images. The surviving plaster casts from the 1860s represent very early examples of fossil reproduction in North America. It is also interesting to recognize that the plaster used to make the casts was gypsum harvested from the same area where the Carboniferous fossil footprints were found.

By tracking down the details of the *Hylopus hardingi,* we find the history of modern and Carboniferous footprints from Nova Scotia that directly influenced the history of geology. Lyell's observation of modern bird tracks in the Bay of Fundy mud during his visit to Nova Scotia in 1842 had profound implications for his interpretation of fossil footprints. The fossil footprints found by Harding and others were traces from an ancient landscape, and it was Lyell seeing birds walking in the Bay of Fundy mud that provided the modern analogue to explain this geological phenomenon.

The historical context surrounding the first edition of Acadian Geology remains of value for the diffusion of geological concepts in Nova Scotia. Dawson's Acadian Geology was the result of 'collective' work done by Dawson and other Nova Scotians interested in documenting the important geology of Nova Scotia. Dawson was an articulate writer and scientist who effectively used visual images to convey complex geological details. The publication of Acadian Geology in 1855 remains a milestone in Nova Scotia science and continues to offer new insights when details are explored with modern tools and resources.

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Practising Chemistry in the British Empire: George Christian Hoffmann (1837–1917) and the Geological Survey of Canada

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Abstract: *George Christian Hoffmann, of German extraction, was born in London. After studying at the Royal School of Mines and working in London as a chemical analyst, he set out on a career that took him to Natal, in south-east Africa, to Melbourne in the Australian colony of Victoria, and to Canada where he had a long career with the Geological Survey, becoming Deputy Director in 1880 and retiring in 1907. In his work with the Geological Survey, he determined the chemical composition and identity of mineral samples collected by and submitted to the Survey, assessing their economic potential.*

Résumé : *George Christian Hoffmann, d'origine allemande, est né à Londres. Il a étudié à la Royal School of Mines et a travaillé à Londres comme analyste chimique avant de se lancer dans une carrière qui l'a mené au Natal, dans le sud-est de l'Afrique, à Melbourne, dans la colonie australienne de Victoria, puis au Canada, où il a eu une longue carrière au sein de la Commission géologique du Canada (CGC); il en est devenu le directeur adjoint en 1880, et a pris sa retraite en 1907. À la Commission géologique, il déterminait la composition chimique d'échantillons minéraux recueillis ou reçus par la CGC et définissait ainsi leur identité, et en évaluait le potentiel économique.*

Keywords: Chemistry; Analysis; Phytochemistry; Minerals; Geological Survey of Canada

MANY NATIONAL AND STATE GEOLOGICAL SURVEYS were established in the nineteenth century, explicitly to support the mining industry through scientific study of the geology of the region and the nature of its rocks and minerals. Canada's geological survey was one of the earliest, being established in 1842 under the direction of geologist William Logan (Sir William from 1856) (1798-1875).[1] In 1846 the Survey appointed Thomas Sterry Hunt (1826-1892)[2] as chemist and mineralogist. Hunt, an American from Yale, had learned his mineral chemistry while working with the Silliman's, father and son, after his graduation as a medical doctor. Appointments like that of Hunt recognized that the complementary skills of geologists, mineralogists and chemists were needed for a full understanding of minerals, particularly those of economic importance such as metal ores.

There is a long history of the involvement of chemists in mineralogical work, and indeed there had been a reciprocal relationship between the mining industry, which needed chemistry to guide important aspects of its work, and the field of chemistry that was developing an understanding of materials as composed of combinations of elements. In the eighteenth century, the investigation of the

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chemistry of mineral chemistry was a major activity of the Swedish Bureau of Mines, and Hjalmar Ford has written extensively about the role of chemists at the Bureau of Mines who brought together academic chemistry, natural history, and artisanal practices that amounted to building a bridge from 'chymistry to chemistry'.[3]

Schools of Mines offered training in assaying–chemical analysis of minerals, especially ores and those containing precious metals such as gold. Their graduates found employment with mining companies, in technical institutions and with government agencies like geological surveys. As with Hunt's employment by the geological Survey of Canada, the British Geological Survey, which began under the leadership of geologist Henry de la Beche in 1845 (after a tentative beginning in 1835 under Ordnance Survey),[4] immediately appointed Lyon Playfair (1818-1898) as chemist.[5] Similarly, the US Geological Survey, founded in 1879[6] sought applicants with knowledge of mathematics, physics, chemistry, geology and mineralogy and appointed Andrew A. Blair, an expert in chemical analysis of iron and steel, as their first chemist.[7]

In Canada, in 1869 Logan was succeeded by Alfred Selwyn,[8] British born and trained in the British Geological Survey under the direction of Henry de la Beche (1786-1855). He had left in late 1852 to take up appointment as geological surveyor for the colony of Victoria at the time of the first gold rushes in the Australian colonies, and later became Director of the Geological Survey of Victoria.[9] When the Victorian survey was closed down in early 1869 due to lack of funds, and Selwyn's appointment was terminated, he was on the point of accepting the directorship of the Geological Survey of Canada, a position made available by the retirement of Sir William Logan. As well as welcoming "imports" like Selwyn, Canada was in advance of other British dominions in developing chemistry schools where local students could take baccalaureate degrees in which chemistry was often associated with geology. John William Dawson (1820-1899), born in Nova Scotia, studied both subjects in Edinburgh before returning to Canada where he became Principal of McGill in 1855. Hoffmann's colleague at the Geological Survey, Canadian-born Bernard Harrington 1848-1907), was a graduate of McGill (BA 1869) and Yale (PhD 1871)[10]. Another was Henri-Marc Ami, born in Geneva of Swiss parents, immigrating with them to Ottawa in 1862. He studied at McGill under Dawson, graduating with an MA and DSc in 1882, before joining the Geological Survey.

Chemistry and associated fields like mineralogy in Canada benefitted greatly from the influx of graduates from Britain and the opportunities for Canadians to study in the United States, Britain and Europe before returning to take up appointments at home.[11] Some of the "imports from Britain" arrived by circuitous paths, and the career of George Christian Hoffmann shows how one chemist made his way from the Royal School of Mines through British colonies in Africa and Australia to end up with a substantial career in Canada. Demonstrated expertise, personal networks, and the development of science and technology in the British Empire saw him on his way.

George Christian Hoffmann: birth and family

Hoffmann's father, George John Hoffmann (1801-1874), was born in Cassell, Hesse, in Germany. He trained as a brewer and migrated to England to take up a post as master brewer. English breweries hired chemists trained in German laboratories, more for their chemical expertise than their knowledge of traditional German brewing technology. Lager beers in the German style became popular in England only later in the nineteenth century.[12] In 1825 George married Elizabeth Hurst (1797-1857) and their sixth child, George Christian, was born in London on 1 September 1837.[13] Christian Hoffmann, as he was generally known, was educated at home and in private academies in England, but the family kept their German connections alive by sending him to Darmstadt for private tuition under Hofrat (Aulie Councillor) Friedrich Haas, who was Professor in the Gymnasium at Darmstadt, then at the Grossherzogliche Provinzial-Realschule, and finally at the Provinzial-Realschule in Darmstadt.[14]

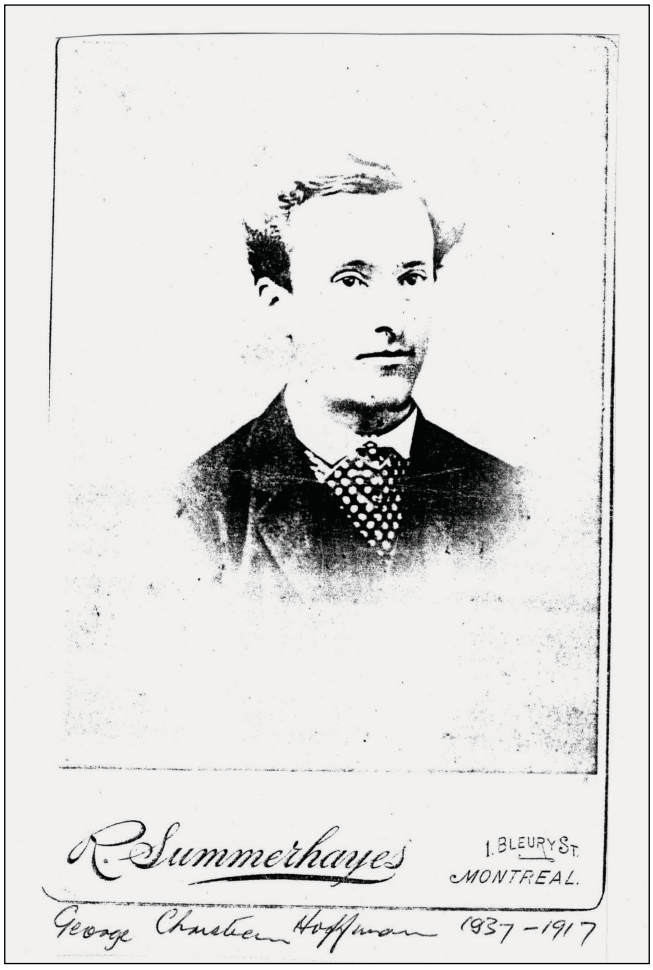

Figure 1. *The young George Christian Hoffmann (courtesy of the Hoffmann family).*

Royal School of Mines

The Royal School of Mines in London, founded in 1851 by geologist Henry de la Beche, later merged with other institutions to become, in 1907, the Imperial College of Science and Technology, part of the University of London. According to the Royal Society of Canada obituarist, Hoffmann entered the Royal School of Mines in 1853, taking courses in chemistry with Professor A. W. Hofmann[15] and in metallurgy, mining and mineralogy, physics, geology, natural history, applied mechanics, and assaying.

The records of the Royal School of Mines show his enrolment as a 'matriculated' student in 1853-1855, attending classes six days a week.[16] His name is not on the list of undergraduates and graduates[17] and nor does it appear in the school's register of old students.[18] Students at the Royal School of Mines were classified as 'matriculated' or 'occasional', those in the former group proceeding to formal qualifications after three years of study, but Hoffmann appears not to have formally graduated after course completion, but instead taken selected courses that would fit him for employment in particular fields. In 1856-1857 he was an 'occasional' student while working as a private assistant with A. W. Hofmann. To be employed by Hofmann as a junior assistant and later a research assistant at the Royal College of Chemistry, he must have been well regarded as a laboratory chemist. Hoffmann was not a co-author of any of the work that A. W. Hofmann published in the *Quarterly Journal of Chemical Society* and nor was his assistance acknowledged as was that of more senior assistants such as Peter Griess.

Hoffmann left England in May 1861 and travelled to Natal, a small British colony in south-east Africa,[19] where he worked with R. J. Mann, superintendant of education in Natal and honorary secretary to the Natal Commission. Hoffmann had been engaged to arrange the material displayed by the colony at the International Exhibition held in London in 1862, but his contribution was not acknowledged in the exhibition catalogue.[20]

It is not known what else Hoffmann did in Natal, but he spent several years there, and the colonial economy had a heavy basis in plant-derived materials so he may have exercised his chemical skills in investigations of plant products. It is known that he visited Mauritius, 2500 km away in the southern Indian Ocean, to familiarize himself with the flora of that island, and from there travelled to Melbourne in *Hannah Nicholson*, one of the ships travelling regularly between Melbourne, Mauritius, Natal and the Cape of Good Hope in support of the reciprocal trade in sugar and phosphate fertilizers between Melbourne and Port Louis, Mauritius.

Melbourne and the Phytochemical Laboratory

Hoffmann arrived in Melbourne in October 1865 and was soon employed by the Director of the Melbourne (later Royal) Botanic Garden, Ferdinand Mueller (1825-1896)[21] to work in the laboratory he had established for the investigation of plant products that might have commercial uses. Mueller was born in

Mecklenburg and qualified as a pharmacist and chemist in Schleswig-Holstein, later completing his PhD at the University of Kiel and arriving in Australia in December 1847. He was appointed Government Botanist in the colony of Victoria in 1852 and Director of the Botanic Garden in 1857. Although the operation of the phytochemical laboratory was sanctioned by his employers, since it concerned economic botany, no designated funding was provided for it and Mueller had to fund it as best he could out of the annual grant. A typical consequence of his ingenuity was that Hoffmann was employed as a gardener, although his real job was in the laboratory. Hoffmann's work there has been covered in detail in our earlier publication.[22] Briefly, it involved the dry distillation of wood yielding acetic acid; the composition of wood ash; preparation of paper from various plant materials; plant resins and tannins; and the isolation and examination of volatile essential oils, especially those of *Eucalyptus* species.

In the late 1860s Hoffmann was thinking of moving on, and Mueller, recognizing that he sought a higher position, wrote a testimonial in which he praised Hoffmann's "great skill, much circumspection and scrupulous accuracy" and his ability to find "many references in the extensive chemical and technological literature of several nations not otherwise equally accessible to others".[23] It was not clear where Hoffmann might have been seeking "a higher position" but if it were in Victoria it would seem that he was unsuccessful because in 1871 he returned to London, leaving Melbourne in February, with the intention of studying medicine at a German university.[24] The fact that he did not take this course may have been due to tensions between France and Germany that had led to the Franco-Prussian war and remained unresolved, even after the Truce of Frankfurt in May 1871. Whatever the reason, he turned his face in the opposite direction, crossing the Atlantic to America. He found no suitable position there, but moved to Canada where he was employed as a chemist in Toronto and Montreal before being employed by the Geological Survey of Canada in Montreal.

Hoffmann at the Geological Survey of Canada

On 5 January 1872 Hoffmann wrote from Toronto to Alfred Selwyn, Director of the Geological Survey of Canada, seeking advice about employment in Canada and obviously (although Hoffmann's letter has not been located) asking about openings at that institution. Hoffmann and Selwyn would have been known to each other since they had been members of the relatively small scientific and technical community in Melbourne in the late 1860s. Selwyn replied a few weeks later,[25] offering sympathy but no opportunities for employment at the Survey, nor with a manufacturing chemist in Montreal whom he had asked. He did, however, mention that his brother, Captain Selwyn RN, was a consultant to some large mining operations in Utah Territory, US, and might have openings for young analytical assayers. He promised to let Hoffmann know of any opportunities and offered to meet should he be visiting Montreal. Hoffmann's approach to Selwyn led eventually to success. In September 1872 he was

appointed as Assistant Chemist. Selwyn wrote to Mueller two months later to say that "your late chemical assistant Mr Hoffmann is now in our laboratory."[26] The opportunity to make such an appointment probably arose when Sterry Hunt left to become professor of geology and mineralogy at the Massachusetts Institute of Technology: Hoffmann served under Hunt's successor Bernard Harrington. In 1879 Harrington returned to a teaching position at McGill and Hoffman was promoted to a leading position as Chemist and Mineralogist, as a consequence of which Selwyn wrote again to Mueller that Hoffmann "now presides in our laboratory"[27] and later that he was "quite well and sends his regards".[28]

Hoffmann was a versatile chemist: his work at the Geological Survey involved rocks and minerals, and represented a transition from the organic chemistry of London and the phytochemistry of Melbourne into assaying and therefore a concentration on inorganic chemistry. As a student at the Royal School of Mines he would have attended lectures on mineralogy by Sir George Stokes and he had taken a special course on assaying under Dr John Perry. He was quickly absorbed into the scientific community in Montreal, where the Geological Survey was based, but in a last gesture to his career in phytochemistry, in early 1873 he spoke about his previous experience in a paper on Australian eucalypts that he read to the Montreal College of Pharmacy.[29] Drawing on his Melbourne years with Mueller, he made specific mention of the medicinal properties of the gum resins and essential oils of the eucalypts. He also showed results of his wood distillation experiments, and the tannic and gallic acids from the bark of the eucalypts. His paper gave details of yield, specific gravity, boiling range, taste and odour of the oils from thirteen species of eucalypt; their suitability as oil for illuminating lamps; and their power as solvents for resinous materials such as rosin, asphalt and beeswax. Although his work at the Geological Survey lay in quite different fields of chemistry, Hoffmann evidently maintained his association with the pharmacists, who appointed him to an honorary membership of the Pharmaceutical Association of the Province of Quebec in 1885.

Hoffmann's work at the Geological Survey

At the Survey, Hoffmann was mainly confined to the laboratory, analyzing the samples brought in by field geologists who had often made preliminary identifications, subsequently to be confirmed by chemical analysis. His results were included in the annual *Reports of the Geological Survey of Canada* in the section entitled "chemical contributions to the geology of Canada". The reports went into considerable detail, covering coal from eastern Canada (1873-4); graphite and orthoclase (1876-7); apatite (1877-8); and coals and lignites of the Northwest Territory (1882-3-4). In 1889 he published an annotated list of minerals found in Canada.[30] This drew largely on the work of his predecessors, notably Dr T. Sterry Hunt.[31] It included 281 mineral species and varieties, mentioned important locations where they were found, and in many cases described their properties and provided references to publications in which the minerals were described. In 1893 he produced a major work of 246 pages, a catalogue of Section 1 of the Museum of the Geological Survey of Canada.

Table 1. Analyses of platinum ores from several locations reported by Hoffmann

Constituent	British Columbia	Oregon	Australia	California	Colombia	Russia
Platinum	72.07	51.45	61.40	85.50	86.20	76.40
Palladium	0.19	0.15	1.80	0.60	0.50	1.40
Rhodium	2.57	0.65	1.85	1.00	1.40	0.30
Iridium	1.14	0.40	1.10	1.05	0.85	4.30
Copper	3.39	1.10	1.40	1.40	0.60	4.10
Iron	8.59	4.55	4.55	6.75	7.80	11.70
Gold	*Note 1*	1.20	1.20	0.80	1.00	0.40
Osmiridium	10.51	26.00	26.00	1.10	0.95	0.50
Gangue/Sand*	1.69	1.20	1.20	2.95	0.95	1.40

Note 1: *Hoffman separated the small proportion of gold before conducting the analysis.*
******* *This fraction contained 'imbedded chromite.'*

Platinum

Perhaps the most significant analytical challenge that Hoffmann faced was from the ores containing platinum and kindred metals that were found in British Columbia, the platinum being in the form of grains of size 0.5 mm to 8 mm having a specific gravity of 16.656.[32] The platinum metals were at that time the subject of great interest around the world; Hoffmann's predecessor Sterry Hunt had investigated platinum minerals found in the province of Quebec in 1851-2. In both cases the platinum was accompanied by alluvial osmiridium and gold, and the ore from British Columbia also contained magnetite and pyrite. Hoffmann reported analytical data for the Canadian samples and tabulated them [**Table 1**] with data for other platinum ores reported by Deville and Debray.[33]

The Paris laboratory of Henri Étienne Sainte-Claire Deville (1818-1881) and Jules Henri Debray (1817-1888) had for several decades led the world in the art of analysing platinum and associated metals, and the results they reported came from samples submitted by mineralogists around the world. In their long 1859 article they reported analyses for three Colombian and three Californian samples, two each from Australia (the results of which were almost identical) and Russia, one from Oregon and one from Spain. They noted that the ores from Oregon and Australia contained comparably low proportions of platinum, but considerable proportions of osmium and iridium, 37.3% for Oregon, 25.0% and 26.0% for Australian ores.

It is likely that Hoffman would have used Deville and Debray's method, fire assay with lead as the collector, to begin the comprehensive analysis of the British Columbia ores.[34] The sequence of operations began with a mixture of the ore with lead, heated to a high temperature in a clay or bone-ash crucible in an oxidizing atmosphere. This is an ancient process known as cupellation, during which molten oxides are absorbed by the cupel. Lead oxide sequesters many of the impurities and the platinum metals remain as a button at the bottom of the cooled mass. This is broken up and treated with dilute hydrochloric acid that removes iron, lead, palladium and rhodium, although small quantities of these metals remain in the solid residue. This solid residue is boiled with *aqua regia* (a mixture of strong hydrochloric and nitric acids), taking the lead and platinum into solution and leaving iridium undissolved. Traditional analytical methods were then applied to the simplified mixtures. Lead was separated by precipitation as sulphate, and platinum as ammonium platinum chloride. In some forms of the assay the cupellation was conducted with silver or a mixture of lead and silver in the presence of borax, but the subsequent acid treatments and selective dissolution of the metals followed the same course. Although this method held sway well into the twentieth century, criticisms of it began in the late nineteenth century and Beamish provided a critical review of their accuracy.[35]

Blowpipe Analysis

Once he became Assistant Director of the Geological Survey in 1882, Hoffmann was less involved in the laboratory work and in his publications he acknowledged other analysts employed by the Survey with whom he had collaborated. The first of these was R.A.A. Johnston whose work was acknowledged in an article reporting the identification of six Canadian minerals.[36] They had been examined by elemental analysis and by the use of the blowpipe, a technique in common use in mineral laboratories in the nineteenth century. Analysis of minerals by blowpipe had been developed by Swedish researchers in the mid-eighteenth century, notably by Axel Fredrik Cronstedt (1722-1765) who introduced the use of fluxes such as soda, borax or sodium ammonium phosphate (microcosmic salt).[37] Cronstedt's work was popularized by Torbern Olof Bergman (1735-1784)[38] and Jöns Jakob Berzelius.[39] By suitable breathing techniques, an analyst could direct a continuous stream of air through a flame so as to strongly heat the sample, usually contained in a depression in a charcoal block, under oxidizing or reducing conditions, and make deductions about which elements were present, based on vapour emissions, flame colours and the nature of residues.

Typical of Hoffmann's reporting of minerals' behavior under the blowpipe was that for lepidolite, a potassium fluoro-alumino-silicate that "fuses easily and with much intumescence to a light yellowish-brown glass, simultaneously coloring the flame intense carmine-red". A mineral judged to be a mixture of newberyite (a magnesium phosphate) and struvite (magnesium ammonium phosphate) that had been recovered from the tusk of a mammoth found buried

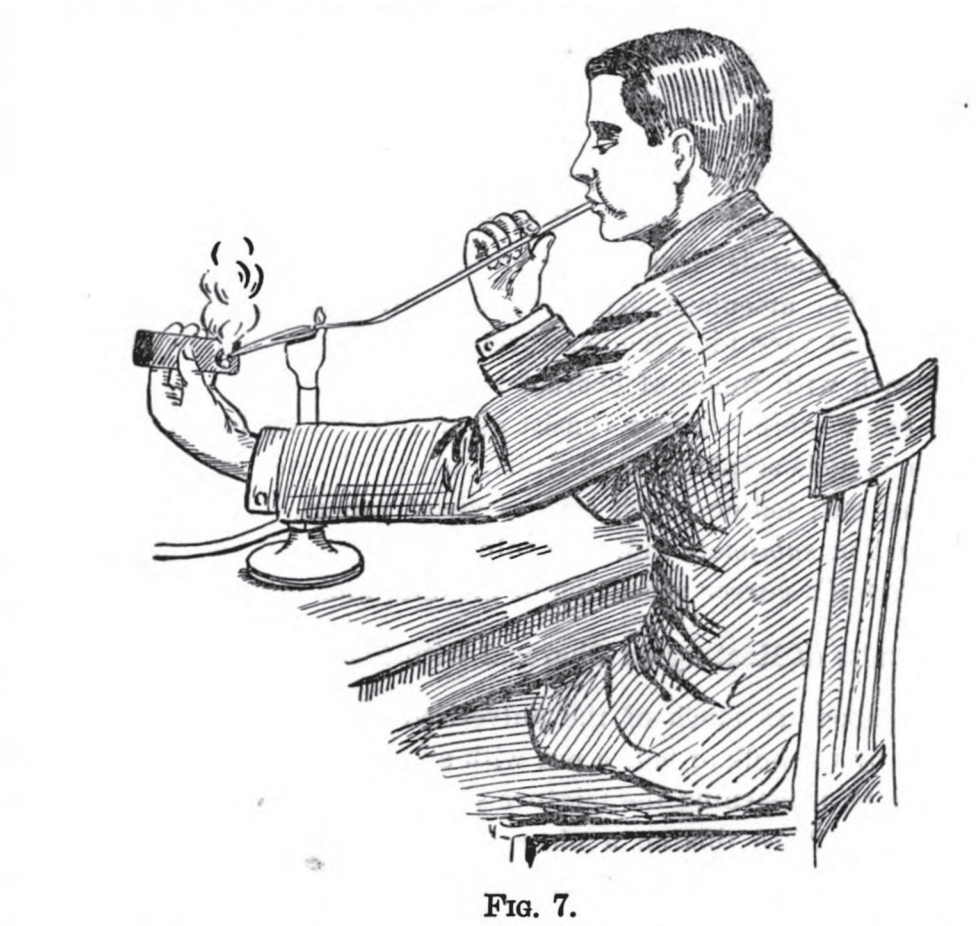

FIG. 7.

Figure 2. *The blowpipe in use with a Bunsen burner flame and a charcoal block from Kahlenberg and Walter, Qualitative Chemical Analysis, 1915. https://catalog.hathitrust.org/Record/012154748*

in the swamp adjacent to the Yukon River in the Northwest Territory, "imparts a green color to the inner flame". Newberyite, as a product of bat guano, had been discovered in caves at Skipton, near Ballarat in Victoria, Australia, and named by von Rath in 1879 after the discoverer, James Cosmo Newbery, another member of the small community of scientists in Melbourne during Hoffmann's time there.[40]

Fusion on a carbon block under the action of the blowpipe was also instrumental in the identification of spodumene (lithium aluminium silicate), a mineral now much sought after in the twenty-first century as a source of lithium. It "swells up and fuses ... to a white glass, imparting at the same time a bright purplish-red color to the flame", that is typical of the element lithium. Likewise uranophane (a calcium uranium silicate) "affords with salt of phosphorus, in the oxidizing flame, a yellowish green bead, which, on reheating in the reducing flame, assumes a fine green color", quite typical of uranium minerals. The analyst F.G. Wait was also acknowledged in this article for his analysis of a mineral rich in titanium, a silicate of the garnet group that the Canadians iden-

tified as schorlomite, collected at Kicking Horse Pass in the Rocky Mountains of British Columbia. Johnston's analyses were also critical in the identification of datolite (a calcium borosilicate).[41] Under the blowpipe, a sample fused "with a slight intumescence, at about 2[42] to a clear glass, simultaneously coloring the flame yellowish green" that we can attribute to the presence of boron. Hoffmann's identification of another mineral from the same Quebec mine as faujasite (a complex sodium calcium aluminosilicate) was tentative.

Using the blowpipe, a chemist or assayer could make a qualitative analysis of a mineral, to be followed up if necessary by further analyses. If discrete crystals were available, this would include crystallographic examination—"crystallography" in that era being the study of the crystal faces and the angles between them,—or chemical analysis for the specific elements whose presence had been revealed by the blowpipe. Blowpipe analysis formed part of the practical curriculum in chemistry and geology (mineralogy) in universities and technical institutions such as mining academies until well into the twentieth century, and numerous books on the technique are still held in their libraries.

Iron Minerals

F.G. Wait also analyzed a nickel-iron alloy recovered during gold dredging operations in western Canada.[43] After separating from other minerals, including gold and platinum, the analysis showed 76.48% nickel and 22.30% iron, making it significantly different from iron-nickel alloys occurring naturally in New Zealand (awaruite) and Italy. Hoffmann suggested that the new mineral be named souesite after Mr F. Soues, who had provided the sample. Awaruite ($FeNi_2$) is recognized as a mineral species and souesite is described as a similar material.[44]

Some of the work reported annually by the Geological Survey was also published in the *American Journal of Science* and in the *Proceedings of the Royal Society of Canada*, of which Hoffmann had become a Fellow when the Society was foundedin 1882. The first of these was about native platinum (discussed above), and it was followed closely by fossil fuels, an annotated list of Canadian minerals and an investigation of some unusual specimens of metallic iron.[45] The elemental iron was found as small spherules (not exceeding 370mm in size) in limonite (iron oxide) deposits in fissures in a quartzite rock stratum. Analysis showed 88.60% iron with small amounts of other metallic elements and 9.76% of siliceous material. There was 0.96% of phosphorus that was probably responsible for a 'phosphoretted odour' observed when the spherules were exposed to dilute hydrochloric acid. Microscopic examination of split spherules showed that each had a siliceous nucleus, suggesting that it had been formed by concretion as limonite was reduced by organic matter. The very low proportion of nickel in the spherules (0.10%) also argued against a meteoric origin for the iron.

From about the turn of the century Hoffmann's publications were also abstracted by a leading international journal that would have brought his work to the attention of European readers. See, for example, his work on the rare mineral chromopicotite, a form of picotite (chrome-spinel) that has a composition within the range indicated by the chemical formula $(Mg,Fe)O.(Al,Cr)_2O_3$.[46]

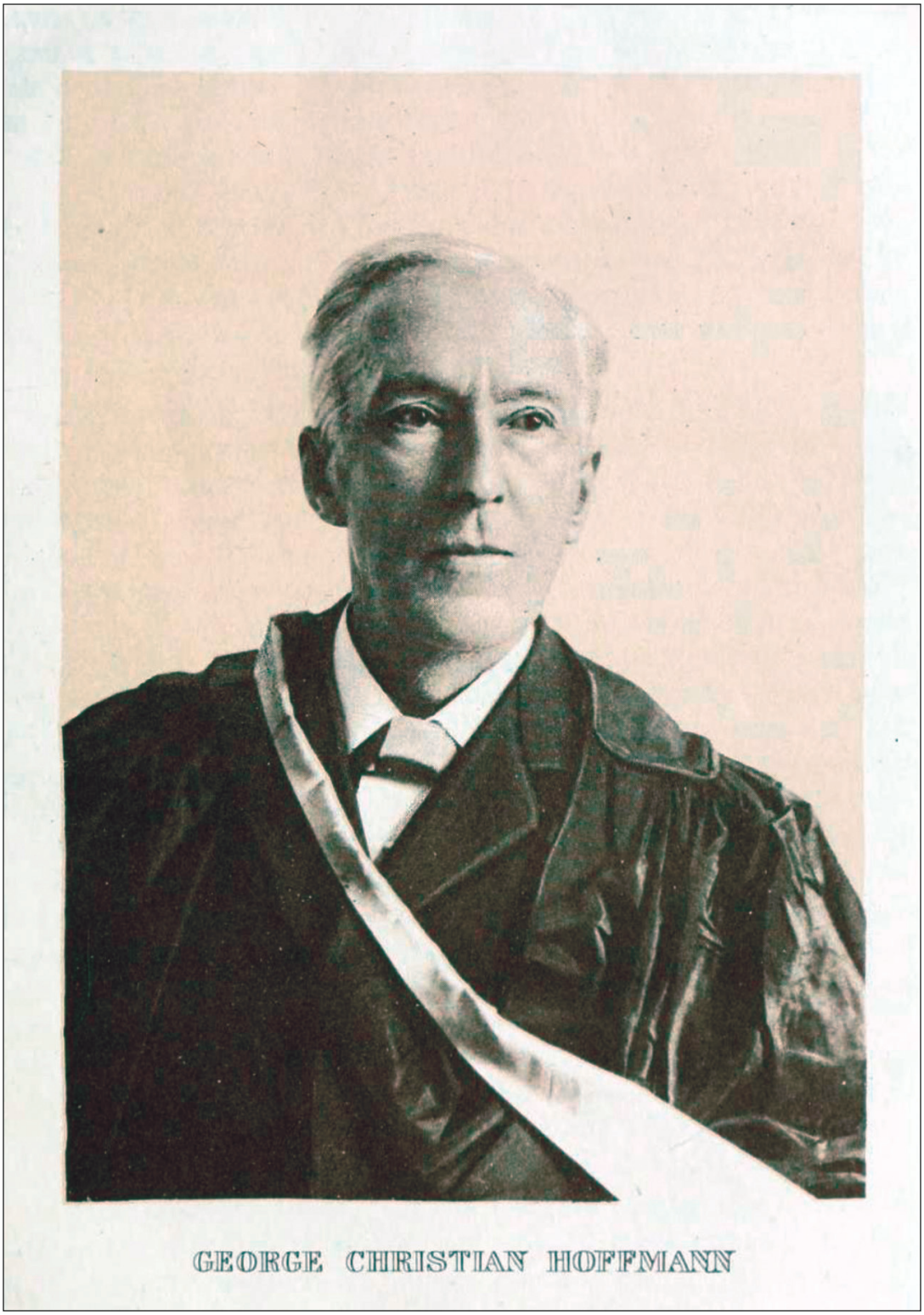

Figure 3. *Hoffmann in Queens University academic regalia from his obituary in Proceedings and Transactios of the Royal Society of Canada, Seruies 3, no. 11 (1917). https://www.biodiversitylibrary.org/item/41905*

Coal

Although Selwyn's personal interest in geology pertained to stratigraphy, especially of older rocks, as Director of the Geological Survey "he always emphasized the economic side of the science of geology without, however, ignoring the claims of original research".[47] Under this heading, Hoffmann investigated the properties of 72 coal samples obtained from about 40 locations across the country.[48] The samples were finely ground and dried by storing in a closed system with a drying agent (concentrated sulphuric acid) for 354 hours. Most loss of mass was observed in the first 48 hours. Lignites, lignitic coals and coals including anthracite lost, respectively, 16-20, 4-8 and 2-3% of their weight when dried in this way, most of which was regained when the dried material was re-exposed to a moist atmosphere.

Hoffmann: personal and professional

Hoffmann was a founding member of the Royal Society of Canada's Section IV (geological and biological sciences) when it was formed in 1882. His standing in the international scientific community was indicated by his election as a Fellow of the Institute of Chemistry of Great Britain and Ireland in 1879, and in 1888 as a Member of the Mineralogical Society of Great Britain and Ireland.

In 1895 Queens University in Kingston, Ontario, conferred upon him the degree of Doctor of Laws *honoris causâ*. His association with the university is unknown, but he did leave a substantial bequest ($35,000) to the medical faculty on his death in 1917, sufficient to provide for Fellowships of $1300 for research in pathology and $1000 for extended studies in surgery. The Fellowships were to be awarded annually to Queens graduates, and the holders were required to study in Europe or the United States of America where facilities for post-graduate research were more advanced than those in Canada.

Hoffmann retired in 1907 after 35-years service, but continued to live in Ottawa (where the Geological Survey had relocated in 1881), until he died in 1917 and was buried in Beechwood National Cemetery.

Conclusion

There are three aspects of Hoffmann's career that enable us to place him in an international context of the history of science and in particular of analytical and investigative chemistry. The first of these is the way that chemical expertise and professional elites moved from Germany to England. The case study of this aspect was the migration of Hoffmann's father from Germany to practice his profession in England, while retaining links that enabled the Hoffmann's to send their son "home" to Darmstadt for education. The very foundation of the Royal School of Mines in London, where Hoffman studied, had been stimulated by Britain's sense that it was being left behind. And the leadership provided there by A. W. Hoffman, who was called from his homeland (and later returned there), is a potent indication of this Anglo-German link.

This leads to the second aspect, the power of the Royal School of Mines to train students in practical disciplines such as mining and applied chemistry,

equipping them to work in Great Britain or, more often, to leave and work abroad. Employment opportunities arose in colonial countries that drew professionals to their settler societies to take up positions in their universities, industries, and government institutions. The latter two destinations particularly attracted chemists who were members of the Institute of Chemistry (of which Hoffmann was a Fellow). The bias to Empire countries was most evident in the early years (1887-1917) for which data on the careers of those with the FIC postnomial were analyzed.[49] The Royal School of Mines had a special role in the generation of this diaspora. In MacLeod's analysis of the places where the graduates ("associates") of this institution pursued their careers,he found that of those graduating in the period 1851-1920 for whom data were available, 17% went to the United States and Canada, 10% to Australia, 19% to South Africa and other African colonies, while 34% remained in Great Britain.[50] Such an associate might work in many countries, some as many as ten, and MacLeod described these cohorts as "a crimson thread of kinship tied to imperial loyalties" tracing "lines of radiation along which tradition and practice have travelled." As we have seen, Hoffmann's trajectory within the empire took him to the colonies ~~of~~ of Natal in southern Africa and Victoria in Australia, ~~and~~ and finally to the newly confederated provinces of Canada. Chemistry and associated fields like mineralogy in Canada benefitted greatly by the influx of graduates from Britain and the opportunities for Canadians to study in the United States, Britain and Europe before returning to take up appointments at home.[51]

Finally, the second half of the nineteenth century, when Hoffmann pursued his career, was a period when chemistry was changing. It became gradually separated from physics, and as sub-disciplines like organic, inorganic and physical chemistry were becoming formalized. Chemists coming into the profession during that half century, more and more frequently specialized in a single branch of chemistry whereas previous generations had roamed widely. There are numerous examples in the history of chemistry and Hoffmann fits nicely into the old, undifferentiated category.[52] According to the nature of his employment, he developed expertise in organic chemistry, working with A. W. Hofmann in London; phytochemistry with Mueller in Melbourne; and mineral chemistry (assaying) with the Geological Survey of Canada. In the last of these he made substantial contributions to chemistry in his adopted country.

Ian Rae recognizes the assistance of Professor Victor Snieckus of Queens University, a good friend, colleague ,and a champion of chemistry in Canada and Australia, who passed away in December 2020. *Ian Rae is an Honorary Professorial Fellow in the School of Chemistry, University of Melbourne, Australia. He writes about the history of chemistry, concentrating on the nineteenth and twentieth centuries, developing Australian and international themes. His most recent publications are the chapters 'May Sybil Leslie and the Disintegration of her Element – Thorium' and 'Four Women Chemists Review the Elements' in* ***Women in Their Element****, eds. Annette Lykknes and Brigitte Van Tiggelen (2019). With Dr Sara Maroske, he is Editor of the Australian Academy of Science journal,* ***Historical Records of Australian Science****. http://orcid.org/0000-0002-7579-3717*

Sara Maroske is an editor of ***Historical Records of Australian Science*** *and the Ferdinand von Mueller Correspondence Project. Her research interests include the history of natural history and the history of women's access to knowledge. Among her most recent publications are 'Naming names: The First Women Taxonomists in Mycology,'* ***Studies in Mycology*** *(2018) and 'Hugh Bryan Womersley 1922-2011,'* ***Historical Records of Australian Science*** *(2019).*

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Archival Update Bowes Collection

Maritime Museum of the Atlantic, Halifax, Nova Scotia

If a picture is worth a thousand words, then Leroy Thorne Bowes' photographic collection represents Canada's importance as a maritime nation. Bowes, who joined the Canadian Hydrographic Survey in 1913, photographed a range of subjects including Indigenous peoples, shipwrecks, coastal communities, landscapes, marine transportation, and trading companies. Safeguarding his camera while charting the waters from Northern Ontario to Labrador, Bowes captures the shifting cultural and marine landscapes from 1915-1923. He officially joined CGS *Acadia*'s hydrographic staff in 1916. The Bowes collection, comprising of 852 photographs and documents, as well as *Acadia*, is located at the Maritime Museum of the Atlantic in Halifax, Nova Scotia. To learn more about the museum and how to access the collection, please visit:

https://maritimemuseum.novascotia.ca/

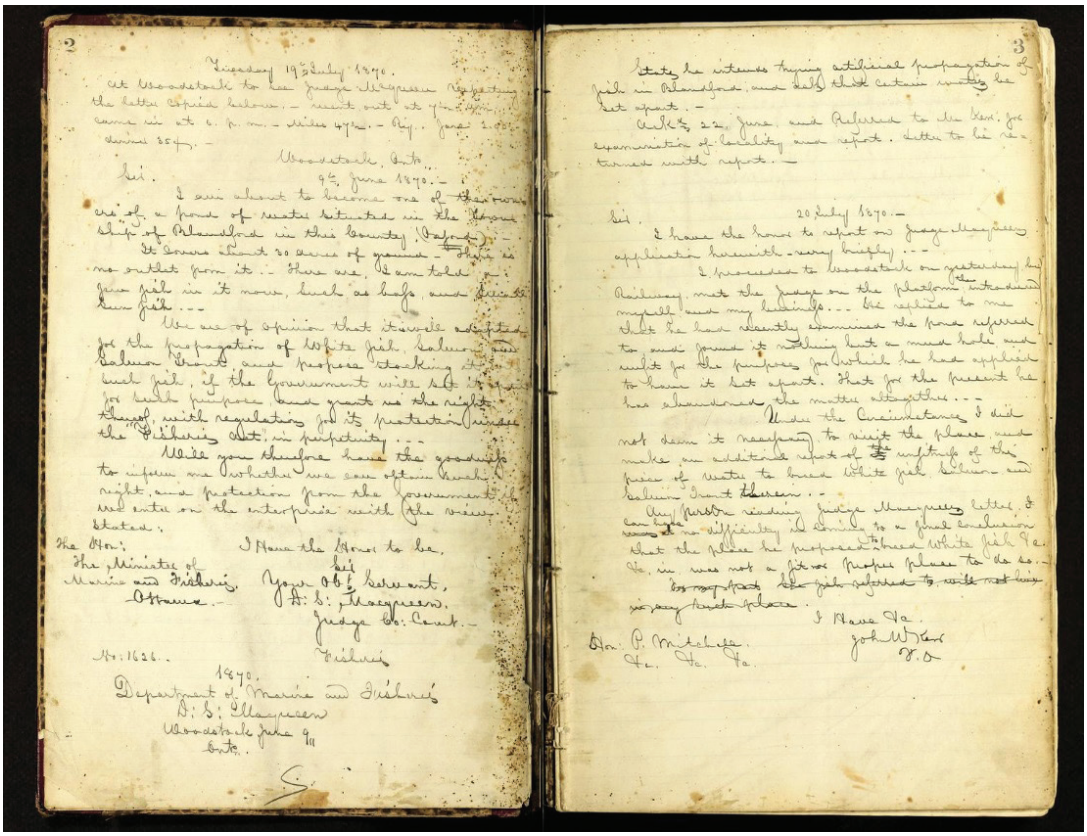
Using leadlines from shore to canoe. Bowes Collection. Courtesy of the Maritime Museum of the Atlantic, Halifax, Nova Scotia, a part of the Nova Scotia Museum, MP313.1.16

Archival Update SC 39 The Kerr Family Fonds

Royal Ontario Museum, Toronto

The Kerr Family fonds consists of the daily record books, letter registers, letter books, and receipts of John William Kerr (1812-1888) and his son, Frederick William Kerr (1852?-1902). All 18 volumes have been digitized and now available online. Kerr was appointed Fisheries Overseer for Upper Canada under the Commissioner of Crown Lands on December 16, 1864, and began to write a diary and make copies of letters which he continued until his death on May 8, 1888. The record books, letter registers, and letter books consist of eighteen volumes, each containing between 292 and 1,004 pages. Part way through volume fifteen, John William Kerr died and his son, Frederick William succeeded him as Fisheries Overseer; Frederick William's correspondence begins on May 7, 1888 in volume fifteen. The letter books are comprised chiefly of correspondence with the Commissioner of Fisheries, the Deputy Minister of Fisheries, and the Deputy Minister of Marine and Fisheries, Ottawa. The record books contain zoological observations and unique information about fishing, people, contraventions of the Fisheries Act, and court trials in the latter half of the nineteenth century.

https://archive.org/details/kerrfamilyfonds



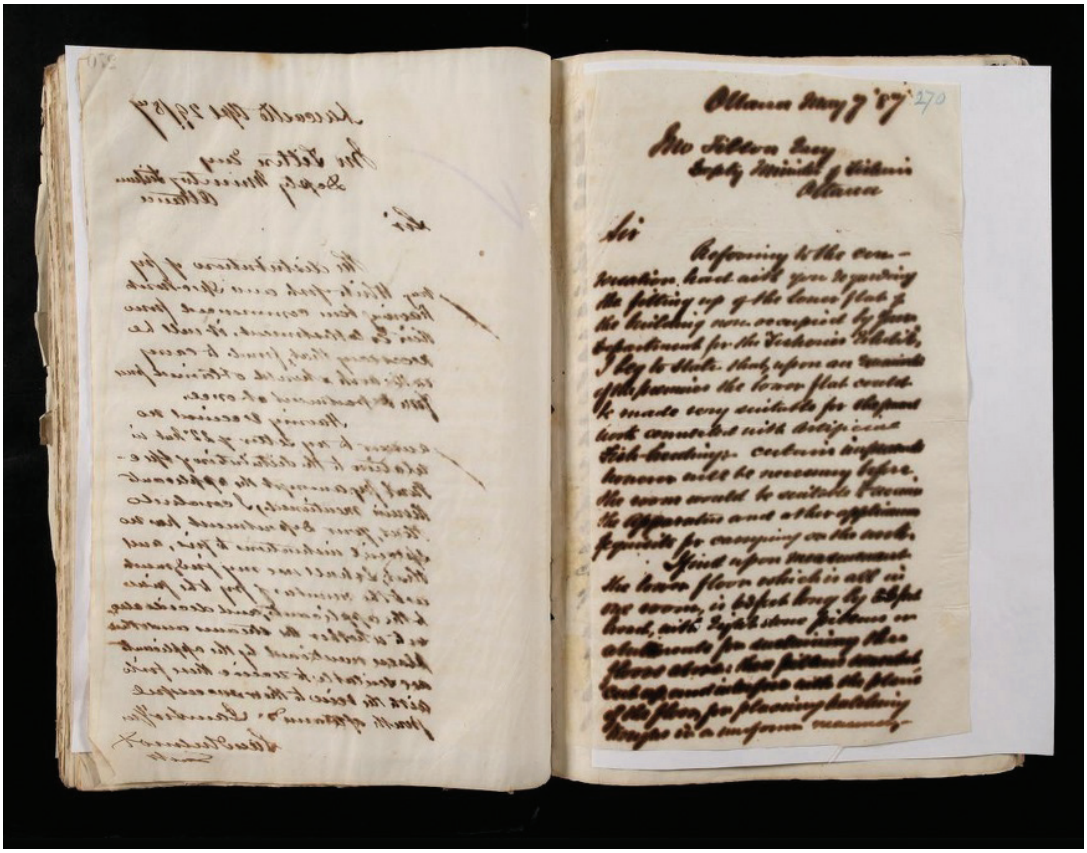
Archival Update SC 62 Samuel Wilmot Fonds

Royal Ontario Museum, Toronto

Samuel Wilmot (1822-1899) established the first large-scale Atlantic salmon hatchery in North America and went on to lead Canada's fish-culture program between 1868 and 1895. From his home hatchery in Newcastle, ON—where he attempted to replenish Lake Ontario's declining population of native Atlantic salmon—Wilmot established a federal fish-hatchery system across Canada and was a key participant in an international network of fish culturists in the nineteenth century. The letter book contains Wilmot's correspondence, principally to Deputy Minister of Fisheries John Tilton, between 1886 and 1889. This recently digitized source is also undergoing crowd-sourced transcription at *From the Page*, where volunteers can contribute a transcription of Wilmot's correspondence, which totals more than 900 pages of often difficult-to-decipher handwriting.

https://archive.org/details/sc62samuelwilmotfonds

https://fromthepage.com/romarchives/sc62-samuel-wilmot-fonds-letter-book-1886-1889



Book Reviews / Comptes rendus

Thomas Preveraud, dir. *Circulations savantes entre l'Europe et le monde*. Rennes: Presses universitaires de Rennes, 2017. 166 ISBN 978-2-7535-5225-8.

Qu'ont en commun les maîtres-raffineurs de sucre du nord de l'Europe, les « renégats » occidentaux en pays d'Islam, les naturalistes britanniques et français, les sociologues roumains, les ingénieurs et les militants écologistes français? Ils figurent parmi les acteurs de la circulation des savoirs et des pratiques scientifiques, techniques et culturels entre l'Europe et les mondes extra-européens du XVII^{e} au XX^{e} siècle. Leurs rôles et les conditions dans lesquelles ils ont évolué sont examinés dans six études réunies dans le 56^{e} numéro de la collection *Enquêtes et documents*, éditée par le Centre de recherches en histoire internationale et atlantique. Ces études sont pour le moins diversifiées dans leurs thématiques et leurs approches méthodologiques. Selon Thomas Preveraud, directeur du recueil, cet éclatement volontaire permet de dépasser les études de cas, de saisir les dynamiques de transfert transnational des savoirs et, ultimement, d'interroger la « construction de l'identité européenne » (9-10).

Avec pour point de départ la ville de Nantes, Marion Tanguy retrace les réseaux de circulation d'un savoir-faire, celui du raffinage du sucre, entre l'Europe du Nord, la France et les Antilles dans la seconde moitié du XVII^{e} siècle. Les secrets de cet « art » étaient détenus par les maîtres-raffineurs du Nord. Pour combler son retard, l'État français encouragea la « captation des compétences étrangères » (20). Des maîtres-raffineurs et des ouvriers étrangers s'installèrent en France, notamment à Nantes. Certains se rendirent dans les îles antillaises et contribuèrent à l'essor des raffineries locales. Cette mobilité d'une main-d'œuvre spécialisée permit aux raffineurs français et antillais de s'approprier un « savoir-faire subtil » (16), indispensable à la lucrative production du sucre raffiné.

Entre le XVI^{e} et le XIX^{e} siècle, « les individus nés dans l'Europe chrétienne qui, à un moment donné de leur vie, se sont fixés dans un pays musulman et en ont adopté la foi et les coutumes » étaient désignés sous l'appellation « renégat » (31). Pierre Ageron présente quatre dossiers « biobibliographiques » consacrés à quatre « renégats » qui, par la traduction d'ouvrages scientifiques européens en langue turque ou arabe, apparaissent comme des passeurs d'un savoir mathématique, physique, astronomique et géographique. Dans leur forme et leur contenu, ces manuscrits témoignent d'une adaptation à la culture locale. Selon Ageron, cet effort « d'inculturation » (35) était en adéquation avec la démarche de conversion religieuse des « renégats » traducteurs.

Thérèse Bru « envisage le double rôle de la distance » (60) dans la construction des sciences naturelles

aux XVIII^e^ et XIX^e^ siècles dans les mondes britanniques et français. La distance, ici, est celle qui sépare les métropoles, où étaient concentrées les autorités scientifiques, des milieux extra-européens, où étaient collectés les spécimens. Au début du XVIII^e^ siècle, cette distance apparaît comme un obstacle. La détérioration des échantillons envoyés en Europe entravait la reproductibilité des expériences. Puis, les pratiques expérimentales se sont standardisées, diffusées et décentralisées. La globalisation des données permit aux savants européens du XIX^e^ siècle d'accroître leur capacité d'analyse. Par un « effet-retour », la distance se serait ainsi « retournée en avantage » pour l'Europe (73).

Emilia Prosceanu revisite la genèse de la sociologie en Roumanie dans la première moitié du XX^e^ siècle sous l'angle des circulations. Elle déconstruit le récit fondateur, identitaire, de la discipline par une analyse centrée sur un « objet localisé », « la sociologie *en* Roumanie », plutôt que sur un « objet de mémoire », « la sociologie roumaine » (81). Les trajectoires, les réseaux de contacts et les réalisations des acteurs et actrices impliqués – du « père fondateur » Dimitrie Gusti aux collaborateurs étrangers de l'Institut Social Roumain en passant par les boursiers Rockfeller – mettent en lumière le cosmopolitisme des débuts de la « sociologie *en* Roumanie », une discipline dont les frontières étaient alors encore indéterminées.

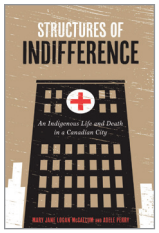
En 1957, l'usine de Paimboeuf (France) produisit des engrais azotés de synthèse selon un procédé novateur développé par la compagnie américaine Texaco. Philippe Martin rend compte des « facteurs institutionnels et industriels » (122) sous-jacents à cette mutation technologique et à son transfert. L'accès aux matières premières apparaît comme un facteur déterminant. Le procédé américain permettait l'emploi des résidus d'une raffinerie de pétrole située à proximité de l'usine. Le transfert du savoir s'effectua rondement : des ingénieurs français se rendirent aux États-Unis et traduisirent des documents techniques. La vie du procédé fut brève. En 1960, l'accès, facilité par l'État, à une matière première concurrente (gaz naturel) mena à l'adoption d'un autre procédé, danois celui-là.

Alexis Vrignon emprunte quant à lui le chemin inverse d'Emilia Prosceanu. Il entend relativiser l'influence américaine sur ce qu'il désigne comme « l'écologisme français » (154) des années 1960. Si la présence de « passeurs transnationaux » (153) au sein de l'organisation *Les Amis de la Terre* symbolise cette influence, les militants écologistes français auraient posé un regard critique sur les idées et les pratiques militantes américaines. Les transferts culturels et militants, qui se manifestèrent sous diverses formes (traductions, voyages, échanges), apparaissent ainsi « profondément ambivalents » (157).

En somme, les six textes réunis dans l'ouvrage dirigé par Thomas Préveraud offrent un aperçu de l'étendue des thématiques dont l'étude, réalisée sous l'angle des circulations des savoirs, peut être fructueuse. Considérant la multiplicité des travaux réalisés depuis la publication de « Knowledge

in Transit » par James A. Secord en 2004 (*Isis*), le recueil aurait bénéficié d'un ancrage historiographique plus développé. Les auteur.e.s des études ont accordé une judicieuse attention aux « passeurs » de savoirs. Souvent invisibles, ces acteurs et actrices « ne peuvent être réduits à de simples vecteurs d'idées » (11). Du XVII^e^ au XX^e^ siècle, ils ont contribué à la transmission, multidirectionnelle, des savoirs savants entre l'Europe et les mondes extra-européens, à leur adaptation locale et à leur redéploiement. Selon Préveraud, « il serait erroné de penser l'Europe comme un centre uniquement émetteur » (12). L'hétérogénéité des études regroupées offre une large perspective sur les circulations savantes. Pour les lecteurs et lectrices de l'ouvrage, qui ne peuvent être familiers avec chacune des thématiques, une harmonisation des textes aurait favorisé l'appropriation du savoir historique transmis.

Mélanie Lafrance, Université Laval



Mary Jane Logan McCallum and Adele Perry. *Structures of Indifference: An Indigenous Life and Death in a Canadian City.* 186 pp. Winnipeg: University of Manitoba Press, 2018. $17.95 (paperback). ISBN 978-0-88755-835-1. Also available in e-book formats. https://uofmpress.ca/books/detail/structures-of-indifference

On September 21, 2008 at 12:51 am, Brian Sinclair, a recognizably Indigenous Anishinaabe man, was pronounced dead at the Winnipeg Health Sciences Center after waiting 34 hours in the emergency waiting room for an urgent, but treatable, bladder infection. Upon his family's insistence, in 2014 an inquest was conducted to determine how and why Sinclair did not receive the urgent medical care he needed and instead, in full view of the hospital staff, was ignored for more than a day while his condition progressively worsened.

In *Structures of Indifference,* the authors contend that the inquest's conclusions were inaccurate because the investigation was limited to an examination of Sinclair's pre-existing medical conditions and past history of substance abuse and to the hospital's deficiencies in staffing and triage procedures. The impact on his death of "stereotyping, false assumptions, and racism within the health care setting" was minimized (107). The medical and support staff assumed that Sinclair was a drunken, homeless Indian looking for a warm place to stay and therefore was not in need of medical assistance, even though he carried a note from his doctor stating that he needed immediate medical attention.

The authors make a strong case that Sinclair's death cannot be understood without examining the intersecting histories of poverty, systemic racism in all of the institutions that impact Indigenous peoples' lives, and unequal access to health care.

McCallum and Perry use a historical, place-based approach in their analysis of the systemic racism within Winnipeg's health-care system. They examine the roots of racialized medicine in the history of Anishinaabe land and cultural dispossession, racial segregation, settler-colonialist racist beliefs, substandard education and health services, poverty, and institutional devaluation of Indigenous lives. One of the consequences of this history is a health-care system in which Indigenous people are often viewed as drains on the system, as outsiders whose health complaints are viewed as not credible or deserving of treatment.

McCallum and Perry also examine the public records associated with the inquest into Brian Sinclair's death that document how his life had been by influenced by structural racism and indifference. This information refutes the negative stereotypes and assumptions that led to his death, i.e., that he was drunk, homeless, or impoverished and therefore to blame for his illness and early death.

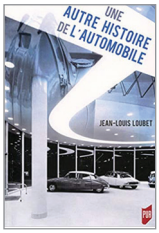
The place-based, historical approach employed in *Structures of Indifference* should make this a useful text in anthropology, sociology, and history courses and interdisciplinary courses on racism, prejudice, and

discrimination. The book will certainly be useful to health-care professionals and others in institutions providing services to Indigenous people such as child welfare, education, and criminal justice systems. It provides a method for recognizing unconscious biases and discriminatory behaviour and the severe, negative consequences of these beliefs and assumptions. The book is a short one, and its primary strength is the fairly comprehensive, in-depth exploration of Brian Sinclair's life and death and the history and persistence of settler colonialism in the Canadian health-care system. The authors note that there is no level of government that "can deny that Canada has a serious racism problem, one that is killing Indigenous people." (60) A longer book might have examined in more detail the broader societal context that normalizes the devaluation of Indigenous lives and the indifference to their needs displayed in the Winnipeg ER and included insights from research on the psychology of oppression, racism, prejudice, and discrimination.

A limitation of the book is that McCallum and Perry do not offer recommendations for combating racism in the Canadian health-care system. They note that the Truth and Reconciliation Commission, in the Calls to Action 18-24, acknowledges the role of settler colonialism on Indigenous health and health care and of discriminatory health-care policies on poor health outcomes. The call was for federal and provincial governments to make significant changes in their delivery of services, including recognizing and incorporating Indigenous culture into health care, offering culturally safe care, and training health-care providers to be culturally competent. They point out that efforts to improve health-care services have been underway for a number of years, but little progress has been made in changing the institutional structures of racism and indifference.

McCallum and Perry were correct in their prediction that, without structural changes, Indigenous people will continue to receive discriminatory treatment in health-care facilities. The death of Joyce Echaquan, an Atikameka woman, who went to a hospital in Quebec in October 2020 for treatment of severe pain and livestreamed her experience of being racially verbally abused by the nurse and orderly, demonstrated again how Indigenous people are stereotyped, often blamed for their illness and their concerns ignored. A headline in *Time Magazine* (10/9/2020) concerning this incident reads in part that an Indigenous women's death is forcing a racial reckoning in Canada. This reckoning would do well to include the insights of McCallum and Perry, where they state, "The final insult of colonization is that the myths of our settler society hold that ill health and early deaths of Indigenous people are their own fault, bearing no relation to the historical context of social, economic, and cultural oppression stemming from colonialism, white supremacy, and racism right here at home." (102)

Josh Manitowbi, Brock University



Jean-Louis Loubet. *Une autre histoire de l'automobile*. Rennes : Presses Universitaires de Rennes. 2017. 404 p. ISBN 978-2-7535-5208-1.

Le titre de l'ouvrage a de quoi susciter la curiosité en proposant une « autre histoire » de l'automobile. Jean-Louis Loubet, spécialiste de l'histoire de l'industrie automobile française, propose une histoire de l'automobile par dates, s'inscrivant ainsi dans la lignée des travaux français d'histoire globale. Pour appuyer son propos, l'auteur a recours aux archives des industries automobiles (Peugeot, Renault, Citroën notamment), des banques et des ministères qu'il a consultés depuis plusieurs années.

Plutôt que de s'en tenir à une évolution chronologique, il prend le parti de proposer une éphéméride, présentant, mois par mois, des événements et des faits historiques. Dans un premier mouvement, cette structuration perturbe et stimule le lecteur, l'amenant à faire des allers et retours entre les débuts de l'industrie automobile à la fin du XIX^{e} siècle et le début du XXI^{e} siècle. Mais, on perd de vue la progression des événements qui parfois se recoupent ou se font suite : pensons aux liens entre le cycle et l'automobile à la fois du point de vue industriel (l'avenir de l'automobile, mercredi 6 janvier 1892, p.13) et du point de vue sportif (Paris-Brest, dimanche 6 septembre 1891, p.263).

L'approche par événements historiques s'avère pertinente puisque l'auteur propose une histoire mondiale de l'industrie automobile. Ce dernier aborde ainsi l'échec commercial de la Nano de l'industriel indien Tata, présentée le 10 janvier 2008 comme la voiture la moins chère du monde (49), la naissance du toyotisme et l'essor de la puissance industrielle asiatique dès 1980 (141), l'accession de Toyota au premier rang mondial des constructeurs automobiles en 2007 (258) ainsi que l'aura « hier comme aujourd'hui » de l'Ile Seguin, siège de l'usine Renault entre 1929 et 1992, aujourd'hui complètement réaménagée (342).

Il s'agit aussi d'une analyse historique des sites industriels. Pour l'entreprise Renault, l'auteur évoque l'effondrement en 1917 du bâtiment C4 des usines à Billancourt en raison d'un manque d'entretien durant le conflit mondial (195), les difficiles tractations de Renault pour s'installer en Algérie en 1961 (p.68) et la grève emblématique des ouvriers de Renault sur l'Ile Seguin en 1968, qui acquiert l'étiquette de « forteresse ouvrière » (174). Pour Citroën, il mentionne l'inauguration par le président de République d'une usine dans la banlieue de Rennes en 1960, poussée par une politique étatique de déconcentration (276). Pour Peugeot, il est question de son installation en Iran en 1976 dont les négociations ont démarré en 1974 avant de rependre à zéro avec l'instauration de la Nouvelle République d'Iran (313).

Ce sont à la fois des histoires économiques et des histoires de circulations qui nous sont présentées. La nationalisation de l'entreprise Renault au sortir de la Seconde Guerre

mondiale (18) et le remplacement à la demande de l'Etat de Bernard Hamon par Georges Besse en janvier 1985 (44) confirment le premier point. La distribution de la Dauphine de Renault en 1957 pour le marché américain, rebaptisée Floride, entérine la circulation des individus et des objets (163).

Plusieurs icônes automobiles sont également évoquées. Pensons à la Ford T, apparaissant en 1908 et qui, contrairement à la légende lancée par Henri Ford, n'était pas toujours noire (231 et 247), à la DS de Citroën, qui fait sensation au Salon de l'automobile de Paris en 1955 avec 80 000 commandes (299), à la Coccinelle de Volkswagen qui, née en 1938 et ayant séduit l'Europe comme l'Amérique, tire sa révérence en 1977 (251), et, finalement, à l'élaboration du « van à la française » de Renault, renommé Espace en 1982 (364).

Jean-Louis Loubet conclut en découpant l'histoire industrielle automobile en quatre temps : celui « des pionniers et des inventeurs [1890-1918], celui des ingénieurs et des gens d'usines [1918-1945] […] le temps des commerçants et du marketing [1945-1980], enfin celui des gestionnaires et des financiers 1980-] » (377). Cette mise au point, pertinente et bienvenue, réagence l'ensemble des faits historiques et permet de prendre de la hauteur pour contempler l'horizon industriel du siècle passé. Ainsi, on pourrait dire que l'on est passé d'une automobile destinée à subvenir aux besoins de la population à une automobile source de profit pour les seuls actionnaires.

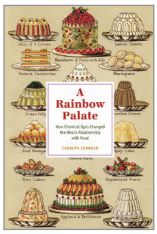
La dernière phrase (385) laisse en suspens le futur de l'automobile pour ce XXI^{e} siècle naissant où le désamour est présent selon l'auteur. S'il est vrai que d'un point de vue occidental, la présence réelle des industries a disparu du fait de la mondialisation, l'automobile dispose d'un réservoir de désir culturel (littérature, cinéma, arts, patrimoine) et s'avère indispensable dans les périphéries urbaines et les espaces ruraux. Que ce soit par plaisir ou par choix, l'automobile, sous ses diverses formes, demeure pertinente selon les situations.

Au final, si la proposition de l'auteur pour « une autre histoire de l'automobile » est davantage dans la forme que dans le fond, on apprécie ces notices qui apportent un éclairage sur l'histoire de l'industrie automobile. On prend conscience que pour qu'un événement face date, il s'inscrit nécessairement dans un contexte historique et géographique. Ce que montrent de manière surprenante ces jours historiques, c'est que l'histoire industrielle de l'automobile est une histoire humaine et plus précisément une histoire d'hommes, les femmes étant absentes de ce volume de près de 400 pages. De plus, il n'est pas fait mention des enjeux environnementaux qui doivent peser plus fortement sur les industriels à mesure que l'on avance dans le XX^{e} siècle, de même que les exigences de sécurité auxquels doivent s'astreindre les firmes automobiles.

On ressort de la lecture de cet ouvrage avec une vision en pointillé d'acteurs gravitant dans et autour de la sphère industrielle automobile. On acquiert aussi une vision panoramique

de l'évolution de l'industrie automobile au XX^{e} siècle qui soulève des questions pour le XXI^{e} siècle : Quel sera le combustible des automobiles ? Comment les industriels vont-ils faire face aux concurrences étrangères ? Où seront produites les automobiles ? Et peut-être plus important : dans quels buts seront fabriquées ces dernières ? Il ne s'agit là que de quelques questions, mais elles indiquent des défis passionnants à relever pour l'industrie automobile.

Étienne Faugier, Université Lumière Lyon II



Carolyn Cobbold. *A Rainbow Palate: How Chemical Dyes Changed the West's Relationship with Food*. 282 pp. plus preface, figs., bibl., index. Chicago: University of Chicago Press, 2020. USD$40.00 (hardcover). ISBN 9780226727059. Also available in e-book formats. https://press.uchicago.edu/ucp/books/book/chicago/R/bo57274125.html

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The synthesis of brilliantly coloured dyes from the wastes of coal-gas distillation in the last half of the nineteenth century is well-known to historians of science and technology. William Perkin's creation and marketing of a deep-purple dye from coal tar initiated, as Anthony Travis has shown, a commercial chemical revolution that created new industries, transformed old ones, and produced new relationships among scientists, businesses, publics, and states. Carolyn Cobbold's book picks up a surprising thread of that history in examining the integration of novel coal-tar dyes into food production, itself undergoing an industrial revolution.

Cobbold has produced a fascinating account and analysis of how these dyes were introduced, contested, and ultimately legitimized in an emerging globalized industrial food system. Cobbold focuses on Germany, Great Britain, France, and the United States—the global centres of the dye industry in the west—and the emergence of analytical and public chemists who strove to detect aniline and azo dyes in foods such as confectionaries, wine, and margarine.

With publics and medical authorities already alert to other forms of food adulteration, the introduction of coal-tar dyes presented new doubts and fears. These concerns and the debates they generated also provided opportunities for analytical and public chemists to bolster their roles, and burnish their expertise, as experts in food safety. But, as Cobbold shows, analytical and public chemists had to confront significant uncertainties. They were, in many cases, unable to positively test for or identify these novel dyes in food; they were also uncertain about their toxic effects on the human body.

These uncertainties undermined their authority. At the same time, analytical chemists were also working for the food industry, establishing careers as engineers of new food ingredients and processes. Caught between these competing interests, chemists vacillated on questions of food safety in the press and in the courts. Were dyes adulterants that compromised food or ingredients that improved it? And were chemists public defenders or industrial scientists? As Cobbold notes, chemists occupied and negotiated these roles simultaneously as they were being generated. Moreover in these multiple roles as creators, mediators, stewards, and guardians, chemists served to legitimize the use of novel dyes as standardized objects of public regulation.

Documenting these linked and parallel processes of professional formation and food-dye legitimization is the core of Cobbold's book. Her argument runs across eight chapters,

the first three dealing with food adulteration, the synthesis of dyes, and transformation of dyes from textile component to food ingredient. The remaining chapters examine the role of analytical and public chemists, comparing and contrasting the different national contexts and regulatory outcomes of their work in Europe and the United States.

In each of the nations under Cobbold's lens, there existed a "restrained negotiation" (155) among companies, consumers, governments, and scientists to establish the boundaries of transparency, regulation, and protection. In Great Britain, where Perkin's dye originated, a laissez-faire, liberal political economy militated against tight regulation of dyes. In the United States, a stricter approach materialized in 1907 with a list that permitted only seven dyes for use in foods. In France and Germany, two dye superpowers, Cobbold notes how variation in regional traditions and preferences for dyed foods influenced approaches to regulation. For Germany, the global nexus of coal-tar production and knowledge, legitimacy was perhaps of even greater economic and political consequence than elsewhere. What was common, however, was the blurring of boundaries between public and private good, an uncertainty that allowed for a novel ingredient to gain acceptance and wide use.

The one thing this compelling book does not deliver on is the promise of its subtitle—how chemical dyes changed the west's relationship with food. Cobbold notes the role of traditional colourants, but does not address how consumers experienced food dyes or how their expectations about food changed with their introduction. But this isn't what the book is about: it is about chemists and their relationship to the food industry refracted through coal-tar dyes. It seems likely that the subtitle was an editorial rather than an authorial decision.

This apparent gap by no means diminishes the book's real contribution. What Cobbold draws our attention to is the inevitable negotiation around expertise and the permitted uses of novel chemical additives. In doing so, she enters a larger discussion about how novel scientific objects and processes evade control once they emerge from the laboratory and enter the world where they are unexpectedly transformed and used. More broadly, this books helps historicize the public construction of trust in science and chemistry. As Cobbold notes, this is not a new feature of our relationship with modern science and remains a critical aspect as we continue to confront the toxic legacies of industrial production.

William Knight, Canada Agriculture and Food Museum

Denis Goulet. *Brève histoire des épidémies au Québec. Du choléra à la COVID-19*. Québec : Éditions du Septentrion, 2020. 179 p. ISBN 9782897911850.

L'irruption soudaine, au début de l'année 2020, de la pandémie de COVID-19 et l'instauration des restrictions sanitaires permettant de lutter contre sa propagation ont conduit le grand public à s'intéresser, comme rarement auparavant, à l'histoire de la médecine et des soins de santé. Les historiens et historiennes spécialisés ont ainsi été massivement sollicités, notamment par les médias, pour mettre en perspective la crise actuelle et la replacer dans le temps long de l'histoire des épidémies et de la santé publique. Plusieurs ont également produit, à cette occasion, des ouvrages de circonstance mettant en valeur d'anciennes recherches ou réactualisant des études connexes. C'est le cas de l'historien québécois Denis Goulet, spécialiste de l'histoire de la médecine et auteur de nombreux ouvrages sur les institutions ou les spécialités médicales de la province, qui a publié aux éditions du Septentrion, où il avait déjà fait paraître en 2014 une synthèse sur l'histoire de la médecine au Québec avec l'historien Robert Gagnon, une Brève histoire des épidémies au Québec. Dans ce petit ouvrage, qui porte surtout sur les XIX^e^ et XX^e^ siècles, il dresse, sur la base d'anciens travaux de recherche et d'une importante littérature secondaire, un portrait des grandes épidémies qui depuis le choléra de 1832 ont ravagé le Québec, ainsi que des moyens mis en place par les médecins et les gouvernements pour lutter contre elles. Avec une approche, habituelle chez l'auteur, à la fois médico-centrée, événementielle et positiviste, l'ouvrage entend rendre compte de la transformation des modèles explicatifs de ces maladies, des « croyances magico-religieuses à l'approche scientifique » (12) et retracer la « trame épique » (17) de nos efforts pour nous débarrasser ces grandes maladies infectieuses.

Après une introduction dessinant les grandes lignes de ce projet, l'historien développe son propos en six chapitres étudiant respectivement, pour le XIX^e^ siècle puis pour le XX^e^, les conceptions étiologiques admises, la nature des épidémies et les mesures préventives pour lutter contre elles ainsi que les attitudes à leurs égards.

L'auteur étudie d'abord les doctrines « pré-bactériologiques » à l'œuvre dans le Québec du XIX^e^ siècle, où l'infectionnisme domine. Abordant les attitudes médicales avec un œil souvent rétrospectif, il s'interroge sur les résistances à l'œuvre chez les élèves d'Hippocrate et sur leur rôle de frein dans la découverte des véritables vecteurs du choléra ou du typhus.

Ensuite, au fil d'une plume habile alternant faits, événements et anecdotes, il décrit les grands épisodes épidémiques depuis le choléra de 1832 jusqu'à la variole de 1885 en passant par le typhus de 1847, relevant tour à tour les conditions sanitaires déplorables dans lesquelles vivaient les habitants de Montréal ou de Québec, le manque de préparation

des gouvernants, le rôle central des congrégations religieuses dans la prise en charge des malades, ainsi que les tentatives des médecins pour freiner la propagation de ces fléaux caractéristiques du XIX^e^ siècle.

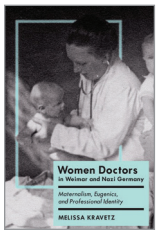
Dans le troisième chapitre, il se penche sur les mesures législatives et préventives mises en place pour lutter contre ces maladies ainsi que sur les représentations à l'œuvre dans la population québécoise et les attitudes qu'elles engendrent. Le tableau dressé est plutôt sombre, entre des médecins et des gouvernants impuissants face à la propagation des maladies et une population décrite comme principalement irrationnelle et donc à éduquer, subissant de plein fouet les conséquences.

Le XX^e^ siècle, abordé dans les trois chapitres suivants, s'annonce plus heureux. Les progrès de la bactériologie, portés par quelques pionniers de l'Institut Pasteur de Paris vers Québec et Montréal, assurent l'essentiel des améliorations dans la prise en charge des épidémies. Elles permettent de développer de nouvelles stratégies prophylactiques depuis le dépistage des malades jusqu'aux campagnes d'éducation sanitaire en passant par les actions de lutte directes ou indirectes, dont les vaccins sont le fer de lance. Les grandes épidémies qui ravageaient le Québec depuis deux siècles disparaissent les unes après les autres, laissant place à un nouveau tableau épidémiologique axé sur les maladies chroniques, mais dont les maladies infectieuses ne sont pourtant pas totalement absentes. Si la grippe espagnole, à laquelle se consacre les cinquième et sixième chapitre, apparait comme le dernier souffle d'un XIX^e^ siècle morbide, la poliomyélite qui marque les années 1940-1950 ainsi que les grippes asiatiques des années 1950-1960 rappellent que le combat des Québécois.es contre les maladies infectieuses n'est pas totalement achevé, et ce même si les outils à disposition sont plus efficaces et les gouvernements mieux organisés. Mais c'est surtout l'épidémie de sida, rapidement abordée à la fin de ces deux chapitres, qui vient dramatiquement remettre en question les prétentions d'une médecine désormais curative que ses précédentes victoires, notamment la disparition de la variole à l'échelle mondiale en 1980, avaient rendu trop confiante. Le SRAS de 2003, l'épidémie de H1N1 de 2010 et bien sûr la pandémie de COVID-19 viendront confirmer cet état de fait.

La lecture de ce bref ouvrage, bien écrit et agréablement illustré (bien que trop rapidement édité aux vues de certaines erreurs grossières comme situer la peste de Marseille de 1720 en 1745 (14) ou faire commencer l'épidémie de sida au Québec en 1981 dans un chapitre puis en 1983 dans un autre), ne manquera pas d'interpeller le lecteur tant les parallèles sont nombreux entre les situations épidémiques du passé, notamment la grippe espagnole, et les évènements que nous vivons aujourd'hui. Il participera à lui donner un aperçu efficace du regard médical porté sur les grandes épidémies au cours des deux derniers siècles au Québec. Se faisant, il contribuera néanmoins à transmettre une vision tronquée et biaisée de l'histoire de la santé en l'inscrivant dans une rhétorique positiviste du progrès téléologique,

faisant régulièrement fi tant des conditions politiques et sociales complexes d'évolution des savoirs et des techniques que du rôle majeur des non-médecins dans les situations sanitaires du passé. Il concourra ainsi à faire perdurer, malgré la richesse des apports historiographiques des 50 dernières années, une approche médico-centrée de l'histoire de la médecine, qui renvoie les citoyennes et les malades au rang de simples profanes, éludant ainsi une part importante de l'histoire de ces épidémies, de leur compréhension et des moyens de les prendre en charge. Autant d'éléments qui seraient pourtant précieux pour faire face aux défis sociopolitiques nombreux qui nous attendent encore dans la gestion de la pandémie actuelle de COVID-19.

Alexandre Klein, Université d'Ottawa



Melissa Kravetz. *Women Doctors in Weimar and Nazi Germany: Maternalism, Eugenics, and Professional Identity*. 229 pp. plus notes, bibl., index. Toronto: University of Toronto Press, 2019. $77.00 (cloth). ISBN 978-1-4426-2964-6. Also available in e-book formats. https://utorontopress.com/ca/women-doctors-in-weimar-and-nazi-germany-3

Melissa Kravetz has written a focused and original analysis of the role of female physicians in Germany during the Weimar Republic of the 1920s and after the election of the Nazi party in 1933. By using the stories of individual women as examples and relying on deeply researched archival sources, she examines the ways in which these doctors "opened up new discursive spaces to achieve political and social results for their patients and for themselves." (229) They did so in the face of significant prejudice, both against female physicians generally, but also sanctioned by the "double-earner" law against married working women. While its primary emphasis is on these physicians, in its discussions of the education, health care and advice provided to girls and women by female doctors, this book also provides a compelling side-glance into those lives just before and during the Nazi period.

The book is organized around five central aspects of this story, with a chapter devoted to each: the roles female physicians played in promoting marriage; preparing girls for motherhood; fighting vices like alcoholism and venereal disease which threatened women and children in particular; supporting the Nazi program of racial hygiene, and collecting breast milk. Woven through the specific narratives is Kravetz's assessment of how these physicians responded to contemporary Weimar and then Nazi ideology in the course of their efforts to carve out their own professional (albeit gendered) space. She contends that not all were true believers in eugenics or Nazism, but as a group, they saw opportunities for their own advancement presented by the rise of those movements with their emphasis on strong, healthy women and children as key to a strong, healthy nation.

Kravetz argues that women physicians grabbed these opportunities in order to secure a professional foothold, even though it meant resigning themselves to work in less prestigious areas of practice than what was available to their male counterparts. However, since these opportunities often meant working part-time in clinics or schools, for example, they also meant that the women had time to carry out their domestic as well as professional responsibilities. By recognizing a professional (and personal) lifeline, one which depended on their support for these ideologies, these women made the most of it, playing up their feminine empathy and arguing that their ability, as women, to bond with and thus advise women and girls about sensitive matters like marriage counselling, birth control, pregnancy and childbirth, was better than that of their male colleagues. Kravetz shows how their approach to practising

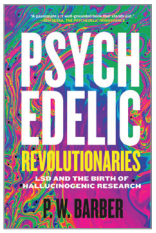
medicine reflected their class biases, as they imposed their own middle-class values on their working-class patients, thus effectively promoting political goals connected to the belief in the need to restore the "quality" of the population.

Chapter 5 is the most interesting. It is the story of the breast milk banks set up to support Germany's mothers and infants, part of the goal to secure infant nutrition in the interests of political goals. Systematic collection of breast milk had begun in Vienna in 1909, and, thanks in large part to the efforts of the entrepreneurial Dr. Marie-Elise Kayser, three decades later, having become a Nazi priority, there were almost fifty breast milk collection facilities in German territory. Rich detail includes information about who the donors were, how much they were paid, how the milk was transported (often great distances and even at times by plane), and conflicts about whether milk from Jewish donors should be accepted.

Apart from bringing to light the history of women doctors in Germany in this period through the vivid portrayal of a number of key individuals, the book's main strength is Kravetz's exhaustive use of archival sources, making German-language material accessible for English-speaking readers. This book will be of interest to those working at the university level in the history of medicine, and especially in connection with women physicians and their role in the field of public health, as well as in the history of gender, women, the family and education in early twentieth century Germany. Those studying the history of eugenics will also find much of interest in these pages, particularly since the triangle which connected public health, eugenics and female physicians existed in many other countries as well. The detailed notes and bibliography are also a very useful contribution to these fields.

We are left wondering to some degree whether we can fairly extrapolate as Kravetz does from the experiences and records of a relatively small number of individuals. Nevertheless, Kravetz's study deepens and shades our understanding of women physicians in this period generally and of how their times influenced the ways in which they practised medicine.

C. Elizabeth Koester, University of Toronto



P.W. Barber. *Psychedelic Revolutionaries: LSD And the Birth of Hallucinogenic Research*. 384 pp., Saskatchewan: University of Regina Press, 2018. $34.95 (paperback), 9780889774209.

In December 2020, Health Canada gave permission to a handful of healthcare providers, including doctors, nurses, and therapists, to use psilocybin—the psychoactive ingredient in "magic mushrooms"—as part of their professional training in psychedelic therapy. Just a few months earlier, the agency granted an exemption for a group of palliative care patients to legally use psilocybin. These moves reflect a larger trend in the medicalization of psychedelic drugs. But this trend is not new. Over 70 years ago, health professionals in North America and Europe were dosing their patients with LSD and psilocybin in the hopes of treating alcohol dependency, cancer-related anxiety, and other mental health problems. Many of those practitioners also took these drugs themselves to better understand what their patients were going through. One of these early practitioners was Humphry Osmond, a British psychiatrist who launched one of the most influential research groups in the first "wave" of psychedelic science—a period stretching from the early 1950s to mid-1970s—with the help of his colleagues Abram Hoffer and Duncan Blewett in Saskatchewan, Canada.

In *Psychedelic Revolutionaries*, P.W. Barber chronicles the rise and fall of the trio's psychedelic experiments to understand how their research came about, what ideas they put forth about psychedelic drugs, and why their work was subject to acidic critiques. Part of this task involves contextualizing psychedelic research within the broader scientific field. Similar to other recently published historical scholarship (i.e., Matthew Oram, *The Trials of Psychedelic Therapy*, Johns Hopkins University Press, 2018), Barber moves the conversation on psychedelic science away from its common association with the sixties counterculture, and instead, examines how transformations in postwar psychiatry impacted the innovations and controversies of hallucinogenic research. In the process, Barber reveals the ways in which scientific knowledge is intimately intertwined with its social environment.

Psychedelic Revolutionaries is divided into two parts. The first part covers the Saskatchewan-based team's work during the period spanning 1951 to 1961. The opening chapters trace the trajectory of Osmond and his colleagues' thinking about hallucinogens. Initially, Osmond and Hoffer took up mescaline as a means of testing biochemical theories of schizophrenia—a move that matched broader psychiatric conceptions of hallucinogenic drugs as psychotomimetic, or "madness mimicking." Later joined by Blewett, the group's research shifted towards studying the therapeutic potential of hallucinogens—after all, it was Osmond who coined the term "psychedelic" with the explicit intention of disentangling these substances from the "model psychosis" interpretation.

Barber shows the crucial contributions that the team made to psychedelic treatment models, particularly through their work using LSD to treat alcohol dependency.

The second half of the book delves into the later years—from 1961 to 1975—with a particular focus on the scientific backlash against psychedelic research. This portion of the book in particular delivers on Barber's promise to demonstrate how larger transformations in science had trickled down, so to speak, to impact the legitimacy of psychedelic science, such as changing ideas about what constitutes "good" methodology (e.g. can randomized controlled methodologies be used to study *all* psychotropic drugs?) and what counts as an appropriate topic of study (e.g. can and should spirituality be subject to scientific scrutiny?).

In focusing on the Saskatchewan group, Barber follows in the footsteps of historian Erika Dyck, whose monograph, *Psychedelic Psychiatry* (2008, Johns Hopkins University Press), offered the first scholarly account of the Canadian research group. To be honest, I went into Barber's book expecting it to more or less rehash what Dyck has already said, but I was pleasantly surprised to find a plethora of new material about this fascinating group. In particular, Barber's incorporation of Duncan Blewett into the Saskatchewan story offers a look into the ideas of an important but often ignored character in the history of psychedelic science—although, Barber's suggestion that Blewett might have been the "Timothy Leary of Canada" felt like a stretch. That said, by highlighting the rifts between Blewett and his colleagues Osmond and Hoffer, Barber demonstrates the internal disagreements that were happening in psychedelic science alongside the critiques from the larger scientific community.

The book's conceptual framework largely draws from the foundational work of scholars like Steven Shapin, Karl Popper, and Michael Polanyi. This literature, however, felt a bit dated. An engagement with more recent scholarship in science studies might add nuance to the larger arguments and make a more unique contribution.

But what the book lacks in theoretical depth, it more than makes up for in its empirical richness. Barber conducted extensive archival and historical research that is organized into a coherent narrative. What's more, Barber accomplishes this using accessible prose, making the book readable not just for historians and sciences studies scholars but for nonacademic audiences as well. Indeed, *Psychedelic Revolutionaries* is well worth the read for anyone who wants to learn more about the history of psychedelic drugs in Canada or about the struggles for scientific legitimacy more broadly.

Danielle Giffort, St. Louis College of Pharmacy

Denis Goulet. *Histoire de la Faculté de médecine de l'Université Laval*. Québec : Éditions du Septentrion, 2018. 336 p. 60,00$. ISBN 9782894489468.

L'historien Denis Goulet et son équipe d'assistants – Caroline Dallaire-Théroux, Camille Rodrigue, Thomas Rodrigue, Philippe Hudon, Philippe Desmarais et Luc Dupont – remplissent par cet ouvrage le mandat confié par la Faculté de médecine de l'Université Laval, à l'initiative de certains de ses professeurs et grâce au soutien de donateurs surtout issus du milieu de la santé. En onze chapitres, on y survole le siècle et demi d'histoire de cette faculté, jusqu'aux années les plus récentes.

Il s'agit d'une mise à jour bienvenue sur l'histoire de cette faculté, qui n'avait plus fait l'objet d'une étude spécifique depuis 1953. Plus de la moitié de l'ouvrage signé par Denis Goulet est ainsi consacrée aux soixante-dix dernières années, à partir d'un matériau souvent inédit ou peu exploité tiré des archives de l'Université Laval. L'auteur a également mis à contribution des entretiens qu'il a réalisés auprès d'anciens professeurs ou doyens de la faculté ainsi que des documents personnels que ces derniers lui ont offerts. Cet accès privilégié aux sources fait la richesse des détails que l'on trouve dans ces pages et a permis d'orner presque chacune d'entre elles d'illustrations remarquables. L'auteur tire également profit de la plupart de ses travaux précédents portant sur différents aspects de l'histoire de la profession médicale au Québec, lui qui avait notamment fait paraître une histoire de la Faculté de médecine de l'Université de Montréal en 1993, à l'occasion du 150e anniversaire de cette dernière. On remarque, par exemple, des passages éclairants sur le programme des « bourses d'Europe » (1920-1959), qui rend possibles les séjours d'études à l'étranger de jeunes hommes devenant, dans la première moitié du XXe siècle, professeurs à l'Université Laval. Denis Goulet a consacré à ce programme un livre paru en 2020 aux éditions du Boréal, coécrit avec Robert Gagnon.

On ne doit pas s'attendre à trouver dans cette histoire de la Faculté de médecine de l'Université Laval une démonstration qui s'articulerait autour d'une thèse centrale. Entre l'outil pédagogique et l'objet de commémoration prenant parfois le ton de l'éloge, ce livre de synthèse se présente plutôt comme un ensemble de rubriques, consacrées à des notices biographiques de médecins, à l'analyse de différents thèmes comme l'essor de la bactériologie, à des événements marquants comme l'épidémie de typhus de 1847, ou à des anecdotes sur la vie de l'institution, l'ensemble étant surtout ordonné par la chronologie des doyens successifs de la faculté. En effet, par la chronologie qu'il expose, ce livre met en évidence les principaux tournants de l'histoire de la faculté et le rôle déterminant qu'y jouent les doyens. On pense, par exemple, au développement majeur de la recherche médicale à partir du décanat du docteur Arthur Rousseau (1921-1934).

Par contraste, on rencontre assez peu les étudiants au fil des pages, sauf lorsqu'il s'agit de présenter les parcours de ceux qui deviennent ensuite professeurs. Du reste, on sort rarement des murs de l'université, ce qu'il serait toutefois injuste de reprocher à l'auteur tant la matière abordée est déjà considérable par rapport à la taille de l'ouvrage.

Quelques irritants quant à la forme et certaines limites quant au propos inspireront peut-être des réserves aux historiens plus spécialisés. On remarque ainsi un déséquilibre entre les différents chapitres, certains ne comptant que quelques pages (le onzième, qui aurait pu être présenté comme un épilogue, tient en deux pages de texte), d'autres en comptant une quinzaine et d'autres encore, plus de trente. Ces déséquilibres auraient été anodins s'ils n'étaient pas doublés d'une certaine incohérence dans l'organisation des chapitres. Jusqu'au sixième chapitre inclusivement, l'ordre est parfaitement chronologique. Puis, le propos, qui en était aux années 1970, revient subitement vers le début du XX^{e} siècle, afin de suivre l'essor de la recherche biomédicale sur quelques décennies. Un semblable retour dans le temps, inexpliqué, survient au chapitre neuf. Ces sauts chronologiques gênent la lecture qui, à défaut d'une thèse, cherche dans le propos une logique d'ensemble. Le choix de ne pas inclure une conclusion générale – le livre prend fin de manière assez abrupte – n'aide d'ailleurs pas à saisir ce que l'auteur voudrait que l'on retienne de son ouvrage. Il est dommage, par ailleurs, que l'édition ait laissé passer des coquilles en plusieurs endroits du texte, notamment dans le nom d'un médecin (103), ou encore qu'elle n'ait pas corrigé quelques erreurs manifestes de mise en forme (la même citation apparaît aux pages 29 et 33 et il y a une redite entre les pages 31 et 33, entre autres). On ne peut s'empêcher de remarquer également quelques détails, qui passeront sans doute inaperçus, mais qui devraient inciter les spécialistes souhaitant utiliser cet ouvrage à des fins de recherche historienne à retourner aux sources citées. Par exemple, en retournant à la source elle-même, on constate qu'une citation à la page 10 (« après huit heures au cimetière, on tire ! ») reprend l'erreur d'une étude de 1988 qui cite mal sa source, puisqu'elle abrège la citation originale et fait une erreur dans sa date de parution. Il se peut, enfin, que le lectorat tatillon soit insatisfait des catégories trop générales et univoques employées dans l'analyse, comme lorsque les changements dans les orientations de la faculté sont décrits comme un passage du « modèle français » au « modèle américain ».

Il faut cependant apprécier cet ouvrage pour ce qu'il est, c'est-à-dire un effort de synthèse qui, comme cela est annoncé en début d'ouvrage, vise avant tout un public de médecins, notamment les étudiants en médecine de l'Université Laval qui doivent apprendre durant leur formation l'histoire de leur faculté. Le public hors des milieux médicaux pourra quant à lui se renseigner sur la genèse et l'actualité de cette faculté, fondée au XIX^{e} siècle comme la première institution catholique et francophone

de formation médicale en Amérique. On la voit devenir, au cours du siècle et demi de son histoire, plus influente, plus spécialisée, plus technique, plus internationale et plus centrée sur la recherche. Indéniablement, la vue d'ensemble que propose cet ouvrage comporte des renseignements précieux pour l'enseignement de l'histoire et pour la mémoire des milieux médicaux québécois. Il donnera à ceux et celles qui y œuvrent, ou qui l'ont fréquenté, des raisons supplémentaires de ressentir une fierté d'appartenir à la Faculté de médecine de l'Université Laval.

Martin Robert, University of Oxford

David Calverley. *Who Controls the Hunt? First Nations, Treaty Rights and Wildlife Conservation in Ontario, 1783-1939*. 224 pp. Vancouver: UBC Press, 2018. $29.95 (paperback) ISBN 978-0-7748-3134-5. Also available in e-book formats. https://www.ubcpress.ca/who-controls-the-hunt

David Calverley's *Who Controls the Hunt?* is a tour de force of Federal-Provincial tensions, Crown-Indigenous relations, and the seedy underbelly of wildlife and conservation policies. It traces the development of Federal and Provincial treaty and policy making from shortly after the Royal Proclamation in 1763 up until 1939, on the eve of World War Two. The book focuses primarily on the Anishinaabeg of Treaty 3, in what is currently known as Northern Ontario, and the difficulty they faced in dealing with the Ontario Game Commission and the Department of Indian Affairs. Anishinaabe challenges were intensified by the failure of federal and provincial agents to find common ground regarding resource management. Calverley's work further complicates this narrative by addressing the tensions present between the Hudson's Bay Company and the development of Ontario's provincial and economic identity.

The book itself is very well-organized with sections chronologically set out. Graeme Wynne provides a foreward that describes Lockean conceptions of liberalism as it pertains to the cultural mentality of Canadian and American land usage, a major focus of Calverley's study. The work is well-cited, with the endnotes divided by chapter. Not counting appendices, the book is a manageable length of 124 pages. The bibliography is conveniently broken up into separate archives for primary source origins, with separate sections for legal, case law citations. The index is meticulous and thorough, and along with the bibliography would prove quite useful for other researchers in this field. These features—philosophical framing, clear citations, and a strong index—invite readers to engage with the history. Indeed, the lay-out of the text invites scholarly discussion.

In some instances, however, this invitation to dialogue seems limited to a specialized audience. For example, Calverley sometimes uses legalese (e.g., *ultra vires*) which may exclude non-academic readers. Yet, his use of collected letters sent between Department of Indian Affairs (DIA) agents, officials, deputies, and superintendents illuminates the convoluted and nuanced nature of the DIA. The Indian Agents attempted to balance their assimilatory goals with the immediate needs of the Anishinaabe people, and far too often they erred on the side of assimilation over meaningful aid. Calverley even goes as far as to cast a favourable light on the infamous Duncan Campbell Scott, who did argue on behalf of the need to recognize Anishinaabe/First Nation's hunting and harvesting rights, despite the organization's desires to transition to agrarian development (72-88). Additionally, as mentioned earlier, Calverley raises an excellent argument by showing that Ontario desperately

tried to undermine the Hudson Bay Company's monopoly in the hopes of supporting Ontarian entrepreneurs, as well as attracting American sport hunters who brought a considerable income to the province.

Despite the strength of Calverley's textual analysis there is an apparent lack of First Nations/Anishinaabeg voices. First Nations voices slip between the lines in the colonial records, either in the few Chief's petitions and letters that survived via the DIA or in the words of Indian Agents petitioning on their behalf. There was an opportunity for the inclusion of deeper Anishinaabeg perspectives, possibly in partnership and collaboration with any relevant Anishinaabeg communities, in the hopes of developing a body of oral history work to counteract the colonial monopoly on history. As the histories of Crown-Indigenous relations develop, it becomes increasingly important that these histories are written *with* the communities in question, not *about them*. That being said, I understand that perhaps that was not the intent of the study at all; rather the author set out to illuminate the inner machinations of colonialism, not necessarily the affects of it. In other words, *Who Controls the Hunt?* appears to be an account of colonial history first, Anishinaabe history second.

The book is clear in its message; behind the veil of Indian Affairs paternalistic management and conservation policies is a long, dark history of harmful colonial policy. Many of these policies were designed to curtail First Nations independence and sovereignty and assimilate them into the larger 'Canadian' mosaic, by eliminating the perceived 'citizens plus' status; all in the name of 'well'-intended conservation policy and liberalist equality. Lastly, the author comments and provides a call to action, arguing that there is plenty of research yet to be done, and the question of *Who Controls the Hunt?* is far from answered (125).

Between the aforementioned organization, the close read of colonial sources, and the open-ended call for research, this work could be a valuable classroom resource. At the undergraduate level, it could be used to show the consequences of the treaty-making process in Canada, namely the seizure, surrender, and purchasing of First Nations land which occurred during the Robinson Treaties. At the graduate level, it could be used to show the depth and breadth covered by colonial sources, but also encourage students to reflect on the consequences of our actions and policies, and on the limitations of our sources - of who we include, of who we exclude, in what we deem historically valuable. Furthermore, beyond the classroom, this work could be a valuable resource for anybody engaged in or considering pursuing a career involving environmental studies or Federal/Provincial policy making, namely in wildlife conservation and game management. I would go as far as heavily recommending it as a means of gaining a deeper, more nuanced understanding of hunting, fishing, and conservation policy in Ontario, Canada and abroad.

Robert Flewelling, University of Guelph

Serge Benoit. *D'eau et de feu : forges et énergie hydraulique, XVIIIe-XXe siècle. Une histoire singulière de l'industrialisation française.* Rennes : Presses universitaires de Rennes, 2020. 450 p. 35,00 Euros. ISBN 978-2-7535-7889-0.

La communauté scientifique se doit d'être redevable à Stéphane Blond et Nicolas Hatzfeld d'avoir réuni et édité les travaux jusque-là non publiés de Serge Benoit, spécialiste reconnu de l'histoire des énergies et promoteur d'une relecture fondamentale des ressorts de l'industrialisation française. Depuis près de quarante ans, l'auteur n'a en effet eu de cesse de démontrer l'importance du rôle des ressources énergétiques traditionnelles - l'eau et le bois - dans la trajectoire industrielle de la France du XIX^{e} siècle, venant ainsi battre en brèche le modèle diffusionniste de l'industrialisation depuis la Grande-Bretagne vers le continent européen qui dominait jusqu'alors et qui voyait dans l'adoption des innovations techniques autour de la vapeur et de la houille l'unique chance de succès des candidats à la modernisation industrielle.

Faisant suite à une préface rédigée par Denis Woronoff et Gérard Emptoz, les écrits de Benoit viennent nourrir trois parties. La première est consacrée au dynamisme des énergies classiques. Elle renferme le mémoire de synthèse de la thèse de doctorat de Benoit soutenue en 2006, pièce maîtresse de l'ouvrage. Intitulée avec un sens de la formule « La modernité de la tradition », ce texte explique l'apport majeur des travaux de l'auteur : l'hydraulique a été l'énergie de la première industrialisation en France. Seuls les sites industriels privés d'eau ou situés à proximité de gisements houillers ont eu recours à l'énergie vapeur, des situations minoritaires, même si certains exemples comme celui de Marseille ont été mis en avant récemment. Cet emploi dominant d'une énergie traditionnelle a-t-il figé l'industrie française dans une forme d'archaïsme handicapant ? Pas vraiment, car l'énergie hydraulique a fait l'objet d'une dynamique continue d'innovations, depuis le perfectionnement des roues et des turbines jusqu'aux améliorations des systèmes de transmission de la force mécanique qui leur étaient associés. La France n'était pas la Grande-Bretagne et a choisi sa propre voie, en s'adaptant à ses particularités et en suivant son rythme. Cette voie française de l'industrialisation permet de rejeter le modèle de la rupture nécessaire pour la modernisation des manières de produire et des outils de production au cours du XIX^{e} siècle. Avec les travaux de Benoit, on note l'importance des évolutions lentes, des tâtonnements et des bricolages s'effectuant au sein de la coexistence durable des systèmes techniques et des différents types d'énergies mécaniques ou thermiques, les exemples des forges de Châtillon et de Commentry étant ici exemplaires.

La deuxième partie s'intéresse à deux « perspectives particulières », en abordant la question des pouvoirs publics et des choix énergétiques en observant les renouvellements techniques à l'œuvre durant la première industrialisation. L'attention

se porte sur les acteurs de l'industrie (entrepreneurs et entreprises, ingénieurs d'État, savants…), sur la mobilisation ou sur la construction de leurs savoirs, sur l'orientation de leurs choix dans les questions énergétiques, sur les conflits qui les opposent dans la mise en œuvre des innovations techniques et dans l'utilisation des ressources naturelles.

On retiendra notamment le travail sur le « second âge d'or » de l'énergie hydraulique dans les villes au XIXe siècle, qui met en évidence aussi bien la revalorisation de vieux réseaux urbains de distribution de la ressource que la mise en exploitation de nouveaux équipements. Le retour de l'activité productive en ville n'a pas été uniquement tributaire de l'emploi de la vapeur. Benoit le montre une nouvelle fois : le parcours énergétique de l'industrie française n'a été ni linéaire, ni marqué par une substitution définitive de l'eau par la vapeur. Dans la même veine, la vision traditionnelle du remplacement du charbon de bois par la houille dans la sidérurgie est remise en cause dans une étude menée par Benoit avec Gérard Emptoz. Durant les deux premiers tiers du XIXe siècle, un « mouvement inventif » s'observe en France dans les techniques de carbonisation du bois, montrant l'importance, dans la durée, du combustible végétal dans ce domaine d'activités.

La troisième et dernière partie s'attache à analyser l'histoire des énergies mécaniques de la France du XIXe siècle à travers l'étude de quelques trajectoires industrielles circonscrites dans l'espace (nord de la Bourgogne, département de l'Eure et Est de la France). Comme le soulignent Liliane Hilaire-Pérez et François Jarrige dans la postface de l'ouvrage, les travaux de Benoit ont cherché à décrypter les temps énergétiques de l'industrialisation. Ils portent dans le même temps une attention marquée aux territoires, depuis les sites de production jusqu'aux régions, et c'est justement cette prise en compte d'échelles spatiales et de caractéristiques locales différenciées qui donne aux résultats des recherches de l'auteur leur force probante. Ce type d'approche n'est d'ailleurs guère surprenant, tant on connaît l'engagement de Benoit en faveur du patrimoine usinier et de l'archéologie industrielle. Les trois textes de cette partie sont d'une grande richesse et pointent notamment quelques pistes de recherche fondamentales attendant encore leurs historiens. On lira ainsi avec intérêt les développements consacrés au marché de l'occasion des équipements énergétiques ou encore à l'utilisation de l'énergie vapeur comme auxiliaire de l'hydraulique.

En sortant de la présentation de l'ouvrage par ses parties, il paraît nécessaire d'évoquer un autre élément fort des travaux entrepris par Benoit au cours des années 1980-2000. En s'intéressant à la question de la transition énergétique, notamment à travers les thématiques de l'utilisation, du contrôle et de la gestion de ressources naturelles, l'auteur peut être perçu comme un des précurseurs de la prise en compte des questions environnementales dans l'histoire industrielle française.

Face à l'importance de cet ouvrage, il reste à formuler un regret. Les

explications sur les techniques de l'industrie peuvent être ardues pour le grand public et même rebuter les chercheurs peu habitués à fréquenter le monde usinier. Les Presses universitaires de Rennes ne pouvaient-elles accorder l'insertion dans les textes d'un ensemble de cartes, photographies, gravures et dessins techniques permettant de mieux éclairer les propos de l'auteur ? La richesse des fonds d'archives parcourus par l'auteur, à commencer par les nombreux croquis disséminés dans les mémoires et les journaux de voyage des élèves-ingénieurs de l'École des Mines, aurait permis de satisfaire cet attendu. Il n'en reste pas moins que l'ouvrage est appelé à faire date et à trouver une place de choix dans la bibliothèque des chercheurs travaillant sur les processus d'industrialisation et les questions énergétiques.

Olivier Raveux, CNRS, Aix-Marseille université